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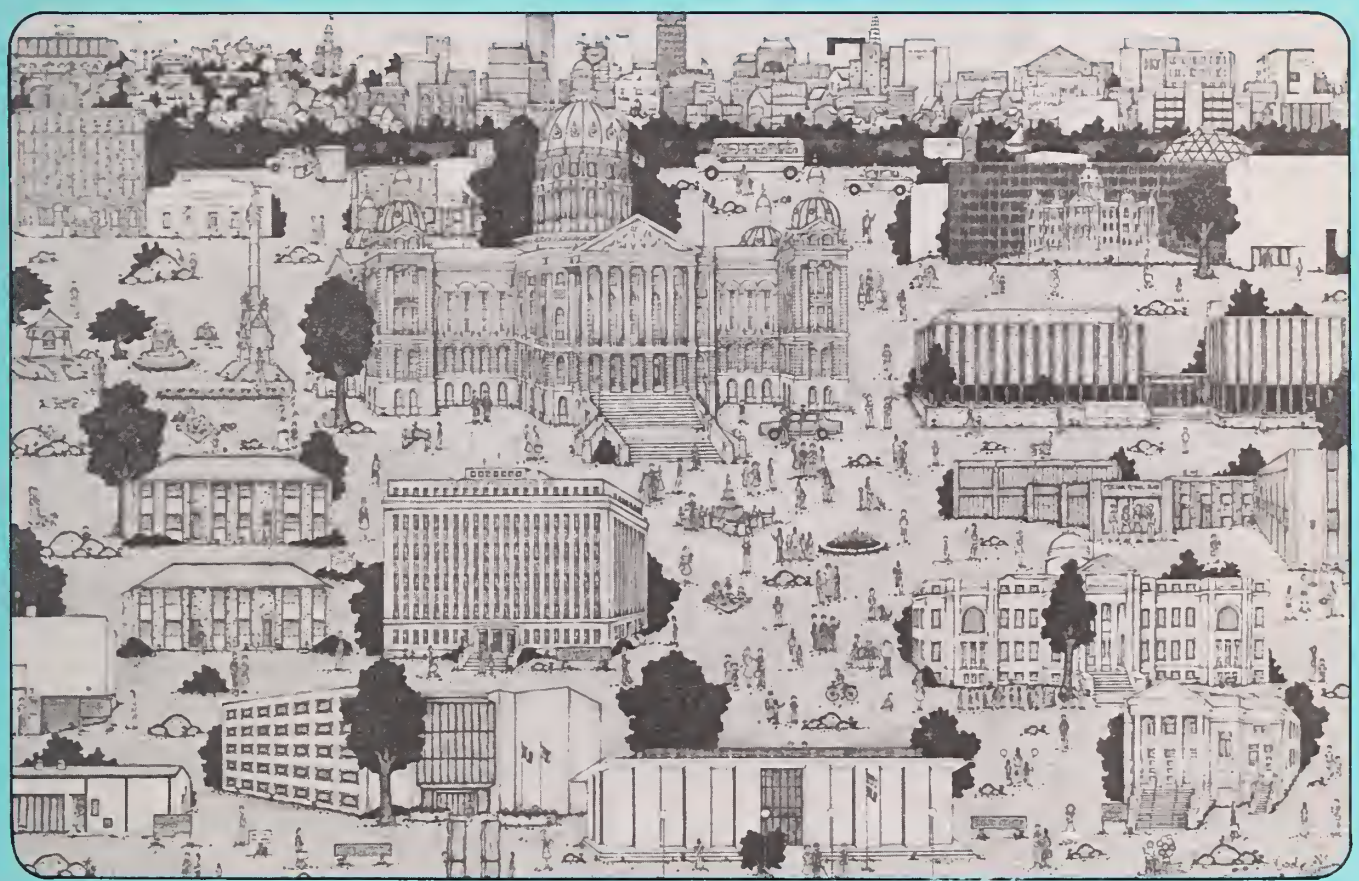
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Journal of the Iowa Medical Society



Legislative Outlook

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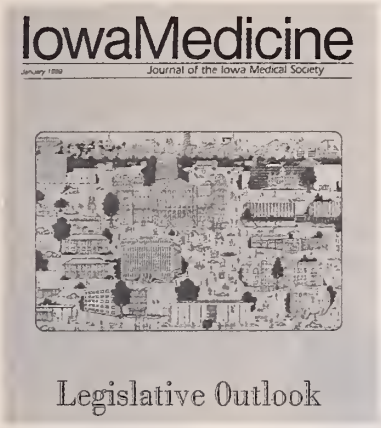
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This month's cover drawing "State Capitol Complex" (Collection: State of Iowa, Art in State Building, Vocational Rehabilitation) is used with special permission of the artist, Carolyn Blattel Britton. Ms. Britton, who lives near Zearing, attended her first art show in 1981. Since then, her pen and ink drawings of Iowa scenes have become increasingly well known. For the next year, the cover of *IOWA MEDICINE* will feature the works of Iowa artists, sculptors and photographers.

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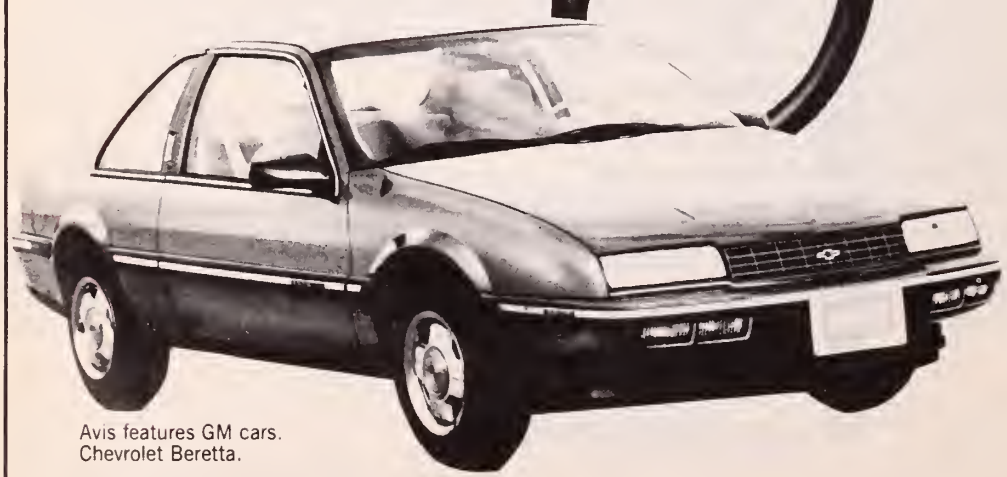
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Daniel M. Youngblade, M.D.

President's Privilege



Be Informed, Get Involved

THIS JANUARY ISSUE of *IOWA MEDICINE* is devoted to legislative activity for the coming year. Enclosed you will find articles listing IMS legislative priorities for 1989, a work plan for achieving medical liability reform as well as comments by staff and members of the committee on legislation.

As you know, the IMS through a variety of approaches has attempted to bring about legislative relief for our malpractice dilemma. We have not accomplished as much as we would have liked considering the amount of time, effort and money we have expended.

Unfortunately, medical liability reform previously passed in various states has been dealt heavy blows. Court decisions have struck down limits of damage awards in Florida, Kansas, Texas and Virginia. The Oklahoma Supreme court struck down a 1976 statute of limitations. Wyoming has made pretrial medical review panels unconstitutional. Florida voters failed to approve a cap on noneconomic damages. The list goes on and on.

The IMS must not back off from efforts to achieve success in the legislative arena. Medical liability reform, defeat of mandatory Medicare assignment, AIDS legislation, access to medical records, mandatory acceptance of patients, the commission on health care licensure, therapeutic substitution and prescribing privileges by advanced registered nurses and physician assistants are only a few of many items we must keep under close surveillance.

The IMS will offer a toll-free legislative hotline on a pilot basis to allow legislative contact persons access to a short recorded message summarizing the latest legislative developments. We hope this will allow contact persons current information when dealing with legislators and help keep all IMS members abreast of legislative positions and changes.

I urge all Iowa physicians to become acquainted with their local legislators and remain conversant in medical and health related issues as well as other issues of personal interest. We must become informed and participating physicians at all levels of legislative activity if we hope to bring about beneficial liability and health reform. Meet, greet and become acquainted with local legislators in their home surroundings so we can hopefully receive our due share of favorable treatment when they return to the Des Moines legislative scene.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

Key IMS Legislative Issues: 1989

CLARENCE H. DENSER, JR., M.D.
Des Moines, Iowa

The author, chairman of the IMS Committee on Legislation, discusses health care issues which will be at the top of the IMS agenda during this year's session of the Iowa General Assembly.

HEALTH CARE RELATED subjects will be among the leading issues facing the 1989 session of the Iowa General Assembly. The following issues are among those that will be of major concern to the IMS in 1989.

Malpractice Liability Reform

The medical liability crisis continues to be one of the most serious threats to Iowa's health care system. While the Iowa legislature has taken action to help solve this crisis, substantial reforms are still needed. The liability crisis continues to increase costs and disrupt the availability of health care services to Iowans, particularly in rural areas.

The Iowa Medical Society proposes the following legislative program to provide relief from the liability crisis.

Tort Reform

- A cap of $250,000 on non-economic damages.
- Require periodic payments of future damages over $200,000.
- Reduce the statute of limitations for minors so that the general statute of limitations applies beginning at age 6.

Procedural Reform

- Require a certificate of merit upon filing of a lawsuit.
- Explore proposals to require mediation of claims prior to trial of a medical liability case, possibly similar to that established in Wisconsin.

Insurance Reporting

- Explore legislative proposals to require reporting by insurers of the final disposition of claims, to replace the current requirement of the reporting of incidents.

Access to Health Care for Iowa Seniors

The issue of access to health care for Iowa's senior ctizens has received considerable attention in the Iowa General Assembly. One approach discussed by legislators is to require physicians to accept the Medicare allowed charge as full payment for Medicare claims as a condition of licensure. The Iowa Medical Society believes this approach will have a detrimental effect on access to health care services for Iowa's senior citizens.

A variation on the mandatory Medicare assignment issue is to mandate specific participation levels for the IMS voluntary program "Medicare Partners." The IMS opposes any such restrictions on the voluntary approach. Not every physician's practice is the same; for many physicians the ability to decide whether to accept Medicare assignment on a claim-by-claim basis is very important to their ability to continue to provide medical care. Unrealistically low reimbursement

Dr. Denser is a pathologist in Des Moines.

levels make acceptance of assignment for all Medicare patients difficult for some physicians.

AIDS

The IMS has been very active in providing technical assistance to Iowa legislators on the issue of AIDS. In 1988, the Iowa Legislature passed legislation which contained requirements for reporting of HIV infections and for consent and counseling of AIDS patients or persons who have tested HIV positive. The legislation also created a partner notification program, provided strict confidentiality safeguards for information relating to HIV status and required accreditation of labs that perform HIV testing.

While the legislation incorporated many IMS suggestions which follow the guidelines of the American Medical Association's position on AIDS, some revision of the legislation is needed this session to ensure it is as workable as possible for physicians and others in the health care field. This will be an IMS priority.

Agricultural Health

Agricultural health is an increasing concern of Iowa farmers, legislators and health care workers as more information becomes available about the dangers of working in agriculture. Available information indicates farming continues to be one of the most hazardous occupations in the United States.

The IMS is ready to provide assistance in gathering information on the extent and effects of those hazards and to work with Iowa's agricultural community and legislators to find ways to reduce the risks of this occupation without disrupting the farm economy. Iowa physicians are in a unique position to assist on this issue as the primary health care providers who initially see the results of some of the hazards to which agricultural workers are exposed.

Licensure, Scope of Practice and Insurance Mandates

In the last several years, many issues relating to licensure of health care professionals, scope of practice and mandated insurance coverage have been discussed by the Iowa General Assembly. Because these issues are difficult for legislators to deal with in a knowledgeable fashion, in 1988 the Iowa General Assembly considered establishing a special commission to be responsible for reviewing such proposals and making legislative recommendations.

The IMS supports establishment of a commission and will work with Iowa legislators to ensure the commission is as workable as possible.

Other Priority Health Care Issues

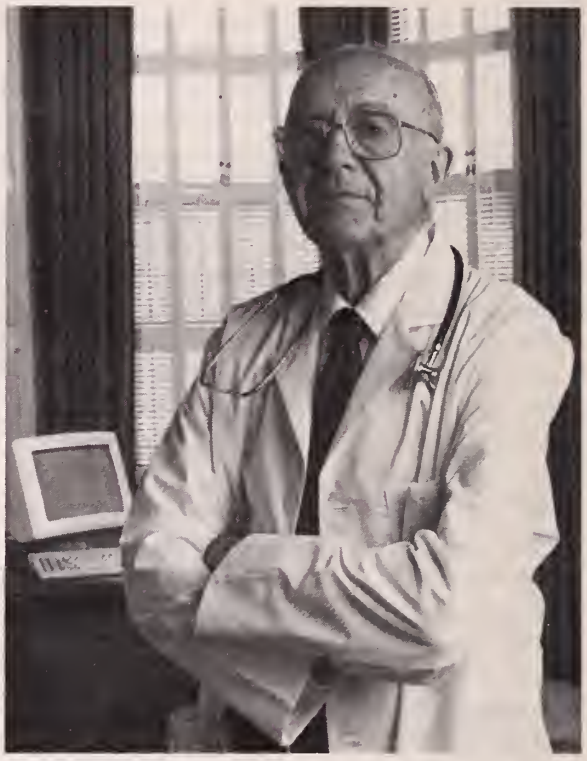
There are many other major health care issues of concern to the IMS which may be discussed in the 1989 Iowa General Assembly. The following will receive priority attention from the IMS.

'The medical liability crisis continues to be one of the most serious threats to Iowa's health care system.'

- The IMS will ask the Iowa General Assembly to provide some limited expansion of Iowa's civil commitment laws to allow the courts needed flexibility to permit commitment of individuals for care and treatment who otherwise are likely to cause themselves serious harm.
- The IMS will oppose any efforts to allow pharmacists to substitute therapeutically equivalent drugs without the consent of the prescribing physician.
- Patient access to medical records continues to be a matter of concern to the general public. While physicians have an ethical responsibility to provide copies or summaries of records upon the request of patients, a legislative mandate would be an extreme exercise of governmental intervention in the private practice of health care professions, according to the AMA. The IMS will monitor developments on this issue.

In addition to these major issues, other issues of concern to public health will receive IMS attention. These include supporting extension of the Clean Indoor Air Act to restaurants and providing mechanisms for enforcing the Act, opposing repeal of seat belt laws and opposing any efforts to loosen restrictions on the sale of fireworks in Iowa.

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Robert Arnould and Keith Luchtel

Questions and Answers

Lawmaking and Lobbying: Two Viewpoints

Bob Arnould (D), Davenport, House Majority Floor Leader in the Iowa Legislature, discusses important health care issues in the 1989 Iowa General Assembly.

What do you see as the most pressing issue confronting the legislature in 1989?

As we set our agenda for the next 2 years, we hope to build on past success, address problems which can be solved through the legislative process and consider new subjects developed during recent campaigns.

Last year we began a review of the K-12 school aid formula, our largest budget item. We will concentrate on finding a solution which addresses quality of education and equity of financing.

Lottery reenactment (it sunsets in 1990) is likely; some changes in lottery funded programs are probable. Rural redevelopment initiatives will top many legislators' lists for early consideration.

Land conservation and farm safety are among measures that will join research and diversification as agricultural priorities. Protecting our air and water resources will top the list of environmental proposals.

Liability is a continuing problem for Iowans. How do you think the Iowa General Assembly will address this problem in 1989?

During my years as a legislator, few issues have been as controversial as the liability issue. Affordable medical care and ensuring delivery of health care to rural areas is an ongoing concern of Democratic legislators.

Last session, legislators attempted to bring the sides together in an acceptable compromise. A bill passed to balance concerns over malpractice insurance costs by creating a voluntary insurance pool which would limit doctors' personal liability while controlling insurance rates and requiring mediation prior to litigation. The governor vetoed the bill.

I believe the concern we exhibited last session by addressing the liability issue will be present. If legislators and other groups such as the IMS are willing to package a compromise, passage of a bill is possible.

What are other important health care issues?

During this fall's campaigns, Democrats stressed access to affordable health care for all Iowans and this issue will be discussed. We will look at maintaining or expanding Medicaid provisions for the elderly and at maternal and child health issues.

(Please turn to page 12)

Health and safety concerns within the agricultural community and for other rural Iowans will be addressed. The interim committee considering improvements to Iowa's laws on involuntary commitment of mentally ill persons is expected to report its recommendations in January.

The legislature began a program in 1988 to improve services for persons with mental health, mental retardation and developmental disabilities. This program will need continued funding and oversight, with possible program changes and expansion. We will begin consideration of a program to expand health insurance coverage to uninsured Iowans. Finally, we may need to fine-tune the 1988 AIDS bills.

How can physicians influence the outcome of bills before the Iowa General Assembly?

It is important to get to know your legislators. When you develop a legislative agenda or lobby a legislator, you must understand what the major agenda items are during a session. Some issues can be handled quickly but most have supporters and opponents and take time to work out. In the past, I have worked with local physicians on a variety of issues and our goals have usually been the same.

'Physicians are in an excellent position to become politically influential. They are highly respected for their professional training and skills.'

Health care issues are often complex and sometimes controversial. Legislators are likely to turn to people they trust for information and advice on difficult bills. Most legislators want to learn about problems and discuss solutions with knowledgeable people. You must be open and honest with the legislator and understand he or she will not always agree with you. Over time, however, you will find yourselves agreeing on many issues.

What do you like best about serving in the Iowa Legislature? What do you like least?

Although Iowa's economy has not been good the past decade, serving in the Iowa Legislature has given me the opportunity to work with business, civic and political leaders on policies to shape the future. We also face the challenge of ensuring government provides the services to meet needs while creating a fair and equitable tax structure.

Being away from my wife and traveling are my least favorite.

Des Moines attorney Keith Luchtel, IMS legislative counsel, discusses how bills become law and how physicians can be politically effective.

What is the role of an association's legislative counsel?

A lobbyist advocates the association's positions before the legislature and state agencies. This involves maintaining contacts with legislators, constantly monitoring legislative and agency developments and serving as an information conduit to and from the client.

During a session, dozens of contacts are made daily and dozens of bills and amendments must be read each day. In addition there is the important role of counselor, which involves assisting the association in developing sound legislative positions and advising as to tactics. Finally, there is the traditional lawyer's role of legal analyst and draftsman.

Please summarize the process a bill follows on the way to becoming law.

An idea is drafted as an individually sponsored bill or as a study bill that is proposed to a standing committee of the legislature by a committee chairman. Upon introduction, an individually sponsored bill is assigned to a committee. Committee chairs assign individual bills and committee study bills to subcommittees. If a majority of a subcommittee determines a bill should advance, it is reported favorably to the full committee.

If a majority of the full committee agrees, the bill is reported favorably to the full House or Senate for consideration. If the House or Senate passes the bill, it goes to the other house where the same process applies (assigned to a committee, etc.) If there are no amendments and the other house passes the bill, it goes to the governor.

A bill may be amended at any point in this process. To become law, a bill must pass

both houses in the same form. Bills sometimes "bounce" back and forth until agreement is achieved. When there is no agreement between the houses after 2 tries, a conference committee made up of members of both houses is appointed to work out the differences.

The product of the conference committee, the conference committee report, must pass each house and is not subject to amendment. There are numerous pitfalls in this complicated process that can "hang up" a controversial bill.

How can physicians be most effective in influencing legislators?

Legislators are influenced the same way we all are. We look to our friends for approval and for guidance in forming our opinions and directing future activities. While constituents who are strangers can affect their legislators, constituents who are friendly with their legislators have a real advantage.

Physicians are in an excellent position to become politically influential. They are highly respected for their professional training and skills. Physicians need to take the time to get to know and build a relationship with their legislators.

What do you like best about lobbying? What do you like least?

The best part is participation in the political process and being involved in current events on behalf of clients you believe in and identify with. The very best is when a client's interest and the general public good coincide, such as drafting and working for passage of the "living will" bill.

The worst is losing. I hate to lose and it is hard to put a good face on a loss, an essential for a statehouse professional. Sometimes it is not in the cards to win an issue. When a client doesn't understand that fact it is very frustrating, especially if the client refuses to realistically modify a position to salvage the best of a bad situation. Sometimes accepting part of what you want is better than getting nothing.

Lobbying is a high stress occupation, even with the best client support. It is depressing when the client doesn't deliver at-home support and an issue is lost. The worst is to make a superb effort, suffer the agony of defeat and have nothing to show for it.

Recent Books

Cohen, Richard L., 1988, *House Officer: Becoming a Medical Specialist,* Plenum Publishing Corp., New York, New York, $24.50. This is a very interesting series of interviews with physicians in specialty training. Insights are given of what house officers perceive as the strengths and weaknesses of their training programs. This is good reading for all of us who have withstood the rigors of specialty training. It should be required reading for all who are directors or participants in the training of house officers.

Myers, Michael F., 1988, *Doctors' Marriages: A Look at the Problems and Their Solutions,* Plenum Publishing Corp., New York, New York, $29.50. A study has shown divorce among physicians and medical students is above the national average. Dr. Myers, a psychiatrist, examines the problems physicians encounter in their personal relationships. The revolutions are interesting and thought-provoking.

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Prehospital Pain Control: Nitrous Oxide Inhalation

TIMOTHY D. PETERSON, M.D. and
DONALD E. KERNS, EMT-P
Des Moines, Iowa

Pain control in the prehospital emergency setting is often a neglected aspect of patient care. This article reports findings from 6 months of nitrous oxide use in the field. Its safety and effectiveness in selected cases is demonstrated.

IOWA HAS SEEN AN EVOLUTION in emergency medical services (EMS) since the Federal EMS Systems Act of 1973. Provisions for more advanced care modalities are being allowed in the field. Priority emphasis is on rapid stabilization, safe transport and effective therapeutic interventions by trained and supervised emergency medical technician providers.

The effectiveness of EMS care delivery systems is measured by their ability to reduce suffering, disability and death. Advances in pain control are receiving much attention. Relief of pain can be beneficial to both the patient and the care provider when analgesics are used responsibly.

Dr. Peterson is an emergency physician at Iowa Methodist Hospital in Des Moines. Mr. Kerns is program manager for the Iowa Department of Public Health Emergency Medical Services section.

History

Since its discovery in 1772 by Priestly, nitrous oxide did not receive recognition as an analgesic until 1868, 22 years after ether came into use. It was mostly used for dental pain. Eventually its combination with oxygen became useful for childbirth and augmentation for newer forms of general anesthesia.

Nitrous oxide has been studied in prehospital pain management since 1969. Several case studies have been conducted, the largest by Stewart in Pittsburgh involving 1200 patients.[1] Conclusions consistently demonstrate self administration of a 50% N_2O:50% Oxygen mixture (NITRONOX) to be a safe and effective analgesic for selected cases during emergency care.

Nitronox Use in Iowa

The pilot study of Nitronox use in prehospital pain control was conducted by Mary Greeley Hospital October 1985 to April 1986 and involved 34 cases.[2] The Board of Medical Examiners has since authorized its use by paramedic services. Services presently using Nitronox are: Mary Greeley Medical Center (Story County), Sumner EMS (Bremer County), County Paramedic Assist (Polk County) and Ottumwa Regional Health Center (Wapello County).

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF JANUARY 1989

TABLE 1

NITROUS OXIDE USAGE
JULY–DECEMBER, 1986

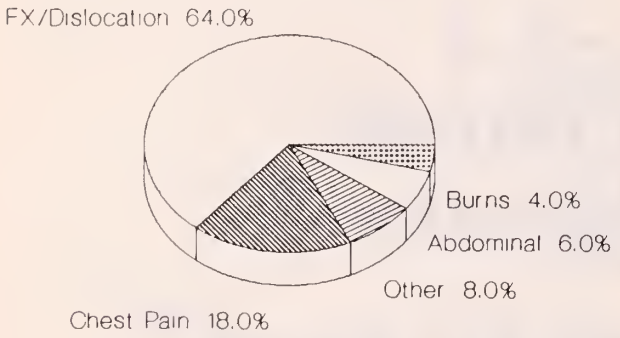


TABLE 2

RELIEF NOTED FROM NITRONOX

Amount of Relief	*Patient Reports*	*Paramedic Reports*
Complete	12%	15%
Moderate	45%	56%
Mild	26%	17%
None	17%	12%

During the first 6 months following the pilot study, July–December 1986, reports were compiled by the above first 3 services on 61 patients receiving Nitronox.[3] The following observations were made:

- The main reason for use was musculoskeletal pain (64%). The next most frequent use was for chest pain (18%). Abdominal pain and burn pain represented 6% and 4% respectively (Table 1).
- Complete or partial pain relief was experienced by 83%. Only 17% reported no relief. The patient's report closely reflects the paramedic's observation (Table 2).
- No side effects were experienced in 46% of patients receiving Nitronox. No patients experienced excitement or vomiting. Side effects experienced were infrequent (Table 3).
- Patient satisfaction was significant. Seventy percent would use Nitronox again; 10% said they would not.

Physical/Pharmacological Properties

Pure nitrous oxide is colorless and heavier than air. It is a nonexplosive gas and liquifies in a cylinder at 750 lb/in^2. Its ability to diffuse rapidly across membranes accounts for its rapid action and rapid elimination when administration stops.

Once thought to work by displacing oxygen and causing anoxia, it will do so only if oxygen concentration in the mixture falls below that of ambient air. Its main effects are through its sedative, anxiolytic, analgesic and euphoric properties. It is a weak anesthetic agent. Studies by Chapman demonstrate 20% nitrous oxide is as potent as 15mg of subcutaneous morphine sulfate.[2]

Prehospital Delivery

Use of Nitronox requires verbal orders via radio from hospital medical control making the decision. The appropriate method is delivery of a fixed 50:50 ratio via a self administered demand valve. The only demand valve available in U.S. Nitronox equipment is a modified oxygen-powered positive pressure resuscitator with the ventilator button removed. With an inspiratory effort of -1 to -5 cm H_2O inside the mask or mouthpiece, gas will be delivered.[4] Since oxygen flow is required to drive the mixing, no gas can be delivered if the oxygen pressure is low or the tank valve is left off.

The mask or the mouthpiece can be held by the patient. When sleepiness or apathy becomes apparent, the patient cannot maintain the seal and administration is discontinued.[5] Providers must continuously monitor the patient and have the skills necessary to handle problems that may arise such as emesis and airway maintenance. Administration with 100% oxygen for a few minutes completely reverses effects, allowing for further assessment by paramedic, nurse or physician.[6]

Indications

Nitronox is especially useful for musculoskeletal pain and burns. Fractures and dislocations uncomplicated by head injury or other contraindications reflect its widest prehospital support in medical literature. Local protocols must be determined by the physician medical director who is ultimately responsible for its use in the field.

Contraindications

Close attention must be paid to potential problems. Since nitrous oxide diffuses rapidly

TABLE 3

NITRONOX SIDE EFFECTS

*Effects Noted**	*Percentage of Times Used*
None	46%
Lightheadedness	15%
Numbness, Tingling	15%
Dizziness	11%
Slurred Speech	10%
Drowsiness	8%
Nausea	7%
Other	5%
Confusion	3%
Excitement	0%
Vomiting	0%

*Multiple side effects per patient included if present

TABLE 4

CONTRAINDICATIONS TO NITRONOX USE

- Head Injury
- Altered Consciousness
- Drug/Alcohol Intoxication
- Dyspnea, Cyanosis, Suspicion of Pneumothorax
- Chronic Obstructive Lung Disease
- Chest Trauma (danger of pneumothorax)
- Abdominal Pain with Distension/Suspicious for Obstruction
- Severe Abdominal Trauma (danger of perforated viscus)
- Decompression Sickness, Air Embolism
- Shock
- Provider not Adequately Instructed and Competence not Reviewed
- Other, as determined by medical director

into air spaces it can increase size of an emphysematous bleb, risking rupture and pneumothorax. Air volume inside a bowel obstruction may increase, risking pain and rupture. Some widely recognized contraindications are listed in Table 4.

Toxicity

Toxicity is usually due to asphyxia and does not occur with the self administered 50:50 mixture. Chronic use and abuse pose toxic problems. Such exposure will cause the cobalt in B_{12} to become oxidized, rendering it inactive and mimicing B_{12} deficiency state.

Sensorimotor neuropathy and spinal cord myelopathy involving the posterior and lateral columns of the spinal cord may develop. Early sensory changes are stocking-glove like paresthesias. As the myelopathy progresses, clumsiness, weakness and loss of balance are present.

In advanced cases of nitrous oxide abuse, impotence, bladder spasticity and constipation occur.[7, 8] Removal of the source gradually reverses the symptoms. The most frequent non medical abuse source noted is from whipped cream cans.

Summary

Prehospital EMS is advancing in management of pain. Nitronox, the 50:50 mixture of nitrous oxide and oxygen, shows potential because of its demonstrated safety, ease of use and patient satisfaction. Results to date in Iowa are similar to those in the leading EMS literature over the last several years.

As with all modalities of prehospital care, the safety and effectiveness of Nitronox requires a responsible component of physician input, provider training and supervision, careful attention to contraindications and continuous quality control.

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Toxic Shock Syndrome Reporting in Iowa

CHARLES M. HELMS, M.D., Ph.D.
Iowa City, Iowa
LAVERNE A. WINTERMEYER, M.D.
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Since August 1980 131 cases of TSS-like illness have been reported by health professionals in Iowa to the Department of Public Health. Over half of the cases have been reported by the Statewide Epidemiology and Consultation Program.

IN 1976, THE UNIVERSITY OF IOWA Hospitals and Clinics Program of Epidemiology, the Iowa Department of Public Health and the Iowa Hospital Association joined in a statewide effort to assist Iowa hospitals to meet infection control standards set by the Joint Commission on the Accreditation of Hospitals. Each of the 137 hospital administrators in the state was contacted and asked to identify a hospital employee to be responsible for infection control. From this pool of infection control practitioners, 8 practitioner-consultants from 8 geographic regions of the state have been selected.

The practitioner-consultants have assumed leadership roles and participated in specialized courses prepared by the program of epidemiology of University Hospitals and Clinics and the Iowa Department of Public Health. They have set up and carried out educational programs for the other infection control practitioners in their regions. Annually, all infection control practitioners are invited to participate in a statewide infection control convention designed to update and deepen understanding of their discipline. The overall goal has been to maintain the infection control practitioner as a vital and important local hospital resource.

In the 12 years of its existence the statewide program, among other functions has played an important public health role in case-reporting. In a recent review, we documented the value of the program in reporting the state's experience with toxic shock syndrome (TSS).

Case Reporting

Between August 1980 and December 1987, 131 cases of TSS-like illness were reported to the Iowa Department of Public Health. The mean age of patients was 23 years, with a range from 6 to 49 years. One hundred twenty-two cases (93%) were female and 108 cases (82%) were menstrually-related. Three cases died for a crude case fatality rate of 2.3%. Reported cases had onset from 1976 to 1987 (Figure 1). The majority of cases (75) occurred in the 3-year period 1981 through 1983 corresponding to the national epidemic of tampon related disease. Since then the number of cases reported statewide and nationally has declined.

The geographic source of TSS reporting was clear in 123 (94%) of the cases. Cases were reported from 35 of the state's 99 counties (Fig-

Dr. Helms is associated with the University of Iowa Department of Internal Medicine. Dr. Wintermeyer is state epidemiologist.

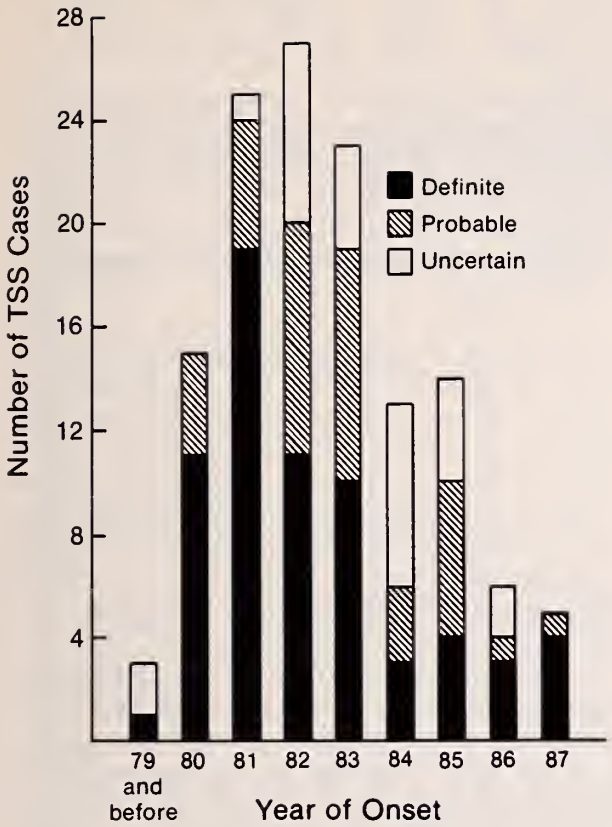


Figure 1. Incidence of cases of TSS-like illness reported to the Iowa Department of Public Health from 1980-1987.

ure 2). Four cases were brought to the attention of county reporters by public health officials in the adjoining states of Minnesota and Nebraska. Seventy-four (57%) of the TSS-like cases were reported by hospitals, 41 (31%) by physicians, 10 (8%) by other health care personnel, 6 (4%) by unknown sources, and none (0%) by patients. Personnel affiliated with the statewide program reported 72 cases of TSS-like illness. Thus the statewide program was responsible for reporting 55% of all cases and 97% of hospital reported cases.

Reporting Efficiency

The reporting efficiency of the program was estimated retrospectively by analyzing discharge diagnosis data from one of the network's members, University of Iowa Hospitals and Clinics. A list was generated of patients discharged from University Hospitals with primary diagnoses of TSS (International Classification of Disease, ed. 9, Clinical Modification [ICD-9-CM]). From this list 26 episodes of TSS-like illness in 25 patients were identified which

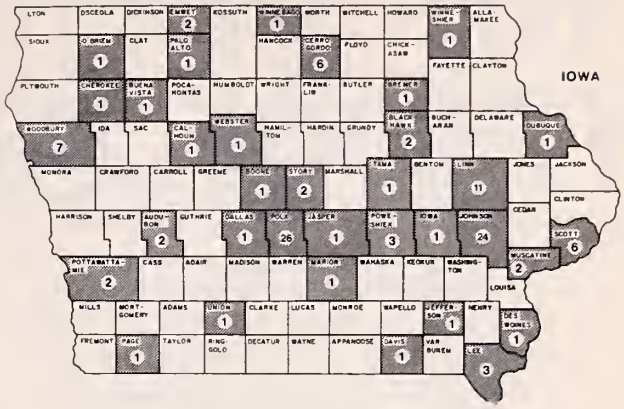


Figure 2. Geographic distribution of cases of TSS-like illness reported to the Iowa Department of Public Health from 1980-1987.

occurred between May 1980 and March 1985. Eight episodes occurred before March 1981 when TSS became reportable and were coded under Shock NOS (785.50) with Ill-Defined Condition NEC (799.8). Eighteen episodes occurred after that date and were coded under Bacterial Diseases NEC (040.89). Eighteen (69%) of the 26 episodes identified were reported by University Hospital infection control personnel through the statewide program. For cases occurring before TSS became reportable, the reporting efficiency was low, only 38% (3 of 8 episodes). For cases occurring after TSS became reportable, the efficiency was higher, 83% (15 of 18 episodes).

Reporting Quality

A case definition of TSS was employed which was essentially identical to previous Centers for Disease Control definitions.[1, 2] The definition requires 6 criteria be met for an unequivocal diagnosis of TSS. The criteria used are:

1. fever 38.9°C (≥102°F);
2. rash (usually a diffuse macular erythroderm);
3. desquamation (usually of palms and soles and occurring 1 to 2 weeks after onset of illness);
4. hypotension (systolic pressure ≤90 mm Hg for adults or <5th percentile by age for children <16 years, or orthostatic syncope);
5. involvement of 3 or more of the following organ systems:

(Please turn to page 20)

- gastrointestinal tract (vomiting or diarrhea at onset of illness);
- muscular system (severe myalgia, or creatine kinase level ≥ 2 X the upper limits of normal [ULN]);
- mucous membranes (vaginal, oropharyngeal or conjunctival hyperemia);
- urinary tract (blood urea nitrogen or creatinine level ≥ 2 X ULN, or ≥ 5 leukocytes per high power field — in the absence of a urinary tract infection);
- hepatic system (total bilirubin, AST (GOT) or ALT (GPT) ≥ 2 X ULN);
- hematologic system (platelets ≤ 100, 000/mm);[3]
- central nervous system (disorientation or alteration in consciousness without focal neurologic signs when fever and hypotension are absent);

6. negative test results on the following tests, if obtained:
 - blood, throat or cerebrospinal fluid cultures;
 - serologic tests for Rocky Mountain spotted fever, leptospirosis and measles.

Cases meeting all 6 of the above criteria are *definite* cases of TSS. Cases meeting the sixth criterion and all but one of the first 5 criteria are *probable* TSS cases. Case meeting the sixth criterion, but failing to meet 2 or more of the first 5 criteria are *uncertain* TSS cases.

Based on this strict case definition it was possible to assess the quality of case reporting by the statewide program. Of 72 cases reported to the Iowa Department of Public Health by the program, 55 (76%) were definite or probable TSS cases. This figure compared favorably with that of physician reported cases. Of 41 physician reported cases, 36 (88%) were definite or probable.

Conclusion

The Statewide Epidemiology and Consultation Program plays a key role in reporting TSS cases in Iowa. To date this program has accounted for 55% of the TSS-like cases reported statewide.

Reporting efficiency results must be interpreted with caution since they are based on data from only one of many reporting hospitals. They clearly cannot be generalized to the entire statewide program. Nevertheless, the results provide a useful estimate. As might be expected from its hospital-based nature, the program was particularly efficient (97%) in reporting cases identified in the hospital setting. In addition, the efficiency of reporting improved (from 38% to 83%) once TSS became formally reportable. The validity of program reporting is evident in that over 75% of the cases reported turned out to be definite or probable cases.

In addition to its role in case reporting, the program contributed significantly to state public health efforts in education and research. The program facilitated the participation of Iowa in the Tri-State Study of TSS which first demonstrated the relationship of tampon absorbancy to risk of TSS.[3, 4] It enabled rapid reporting of clinical information to state and national physicians early in the course of the TSS epidemic.[5-7] It has permitted ongoing clinical and epidemiological studies of TSS.[8]

We conclude the Statewide Epidemiology and Consultation Program has been a valuable contributor to the public health of Iowa in the 12 years of its existence. The program continues to prove important in the present era of AIDS by facilitating case reporting and assisting in the education of health professionals.

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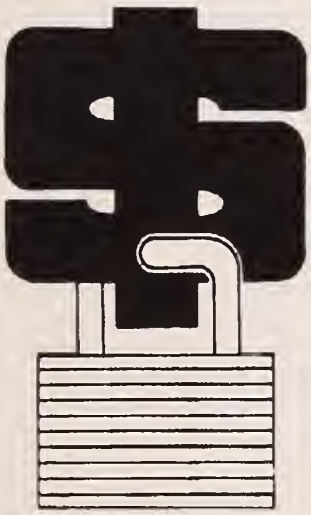
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LETTERS TO THE EDITOR

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Clinicopathologic Conference



The Case of a Young Man with a Stroke

A 27-YEAR-OLD-MAN was admitted to University of Iowa Hospitals because of confusion and an abnormal computed tomographic (CT) scan of the head.

Clinical Findings

One week before admission he failed to report to work and the following day was found at home confused and assumed drunk. Two days before admission he came to work unkempt and disoriented. A friend brought him to a local emergency room and he was transferred to University of Iowa Hospitals. Details of the past medical history were not known. His employment application indicated no medical problems. He occasionally drank alcohol and was not known to abuse drugs.

Temperature was 36.6°C, pulse 60, respiratory rate 16 and blood pressure 120/70 mmHg. There were no skin lesions or palpable lymph nodes. Head and neck were normal except for very poor dentition. Chest and abdominal exams were normal. He had a fluent aphasia and made frequent paraphrasic errors and word substitutions and exhibited written and verbal perseverations. He could not read or follow 2-step commands. Cranial nerves were intact. The funduscopic exam was normal and visual fields were full by confrontational testing. Muscle mass, tone and strength were normal. Exams for sharp and dull discrimination, light touch and proprioception were normal. Reflexes were asymmetric with the biceps, triceps and brachioradialis all 3+ on the right and 2+, 1+ and trace respectively, on the left. Knee and ankle jerk reflexes were 2+. Babinski reflex was present on the right.

Urinalysis was normal. Complete blood count and differential were normal. Electrolytes, urea nitrogen, creatinine, calcium, phosphorus, total protein, glucose and liver function tests were also normal. Erythrocyte sedimentation rate was 20 mm per hour.

Chest x-ray was normal. A head CT scan showed a 3 × 5 cm low density area in the left posteroparietal region. Anterior to this lesion was a 2 cm enhancing area of luxury perfusion. An echocardiogram revealed a thickened anterior mitral valve leaflet but no definite vegetations. A left carotid angiogram showed lack of filling of numerous posterotemporal and angular branches of the middle cerebral artery and delayed flow through irregular posteroparietal branches.

On the third hospital day, 1 of 4 blood culture bottles grew gram positive cocci in clusters. A diagnostic procedure was done.

Clinical Discussion

William E. Bell, M.D., Pediatric Neurology: I would first note the patient is male and 27 years old. Certain disorders are more prevalent in one sex and his youth diminishes probabilities of some illnesses. We also know his illness was relatively brief and had an abrupt onset. He was brought to the hospital by a friend rather than a family member. In certain settings this could be significant. One may wish to know whether the friend was male or female and what was the relationship with the patient.

(Please turn to page 24)

This material is furnished by the Department of Internal Medicine, University of Iowa College of Medicine and is edited by John P. Bennett, M.D.

Physical signs indicate some form of focal cerebral dysfunction. The dysphasia with dyslexia suggests the process at least involved a portion of the posterior aspect of the left temporal lobe. One can assume minimal involvement of the posterior frontal region because of the absence of paresis. The same can be said about the anterior parietal region since there was no sensory loss.

The CT scan showed a nonenhancing lesion with little mass effect and lateral ventricles that are midline with no distortion of shape. A nonenhancing process without significant mass effect is not likely due to a tumor. In general, if a primary brain tumor is of sufficient size to cause global mental confusion, it will have a significant effect on adjacent structures. A strictly localized lesion without mass affect in the posteriotemporal region would be expected to cause localized abnormalities in the region of the lesion and would not be expected to be associated with confusion or lethargy.

Angiographic findings show abnormalities which involve multiple medium-sized cerebral arteries. One cannot ascertain whether the occluded vessels are obstructed from primary intrinsic disease or because of embolic obstruction. The multiplicity of vessels involved and the description of both occlusion and vessel irregularity suggests the process is primarily inflammatory affecting the vascular structure rather than obstructive from embolization.

The absence of fever and leukocytosis and the normal sedimentation rate are important points. A majority of patients with bacterial sepsis or endocarditis will be intermittently febrile, have leukocytosis at some point or have an elevated sedimentation rate. Most with endocarditis will have cardiac murmurs. The absence of significant murmurs does not completely exclude the possibility of endocarditis but significantly diminishes the probability. One of 4 blood culture bottles grew a gram positive coccus organism after 48 hours. Such an organism isolated 48 hours after the blood was obtained from an afebrile patient without leukocytosis can probably be assumed not to be *Staphylococcus aureus*.

One should consider whether the patient is immunocompetent or immunosuppressed. The history does not provide much support for an immunosuppressive illness. However, immunosuppression without clinical manifestations raises the possibility of infection with the human immunodeficiency virus (HIV). Progressive multifocal leukoencephalopathy can be the first manifestation of HIV infection. This viral illness can also provoke a cerebral vasculitis, however, the CT findings are not compatible with this diagnosis.

A second line of inquiry is whether this patient's illness has a noninfectious etiology. One possibility, not yet proven to be infectious, is granulomatous angiitis of the brain

'The occurrence of a stroke in an afebrile young adult with a normal white count and sedimentation rate and with evidence of vasculitis would be more compatible with meningovascular neurosyphilis than other possibilities.'

which can result in angiographic abnormalities similar to those seen here. Most people are older than our patient, have a more chronic history, evidence of more diffuse brain dysfunction and a significantly elevated sedimentation rate.

Another disorder with similar angiographic findings is necrotizing cerebral angiitis seen in intravenous drug abusers. This can be a very difficult diagnosis to establish. About the only way to prove this type of vasculitis in the absence of a history of drug abuse is with a brain biopsy showing either talc crystals or foreign material within the involved cerebral vessels. Left atrial myxoma with tumor embolization to the brain might also be considered; but the absence of murmurs, congestive heart failure or evidence of other organ embolization substantially diminishes this possibility.

Collagen-vascular diseases deserve consideration. Systemic lupus erythematosus is much more common in young adult females than in males and the angiographic findings demonstrated here would be very unusual. The patient's angiographic abnormalities can be seen with the Churg-Strauss syndrome. However, cerebral involvement with that disorder

is quite infrequent. In addition, there is no history of chronic asthma and significant eosinophilia. Deficiencies of protein C, protein S and antithrombin-III represent rarely encountered causes of primary thrombotic cerebrovascular disease in young people.

Infectious illnesses deserve consideration and one possibility is septic cerebral vasculitis. Herpes zoster cerebral angiitis is expected to follow identifiable segmental cutaneous herpes which had not been described in this patient. The poor state of dentition raises the possibility of anaerobic bacteremia complicated by bacterial endocarditis with subsequent cerebral vasculitis. However the absence of fever and leukocytosis as well as the absence of murmurs make this consideration less likely.

Among infectious illnesses not yet considered is meningovascular neurosyphilis. The question arises whether or not the patient had had a primary or secondary stage of syphilis. A negative history of the primary or secondary stage in a young adult with acute meningovascular neurosyphilis would not be unusual or surprising. The occurrence of a stroke in an afebrile young adult with a normal white count and sedimentation rate and with evidence of vasculitis would be more compatible with meningovascular neurosyphilis than other possibilities.

As one approaches a final diagnostic decision, it is apparent there are 3 primary considerations that become difficult to completely separate. First is the possibility of bacterial endocarditis despite the relatively benign findings on the echocardiogram and the lack of unequivocal evidence for infection. Second, our information does not completely exclude the possibility the patient was an intravenous drug user and as a complication has cerebral necrotizing angiitis. The third possibility is that he has meningovascular neurosyphilis. I conclude the second possibility is the least likely, the first and third are the more likely and meningovascular neurosyphilis with infarction being the best possibility.

I suspect the diagnostic procedure was a lumbar puncture and CSF examination.

Diagnostic Procedure

A lumbar puncture was done on the fifth hospital day. The CSF had 12 red blood cells/mm^3 and 179 white blood cells/mm^3 with 175 lymphocytes and 4 plasma cells. The glucose was 35 mg/100 ml (serum glucose was 108 mg/100 ml) and protein was 144 mg/100 ml. CSF cultures were negative. VDRL titers were 1:16 (serum) and 1:32 (CSF) and the FTA-ABS was reactive with both serum and CSF. During the initial 4 days of hospitalization, 7 of 12 blood culture bottles grew *Staphylococcus aureus*. A repeat echocardiogram showed a bright and somewhat thickened anterior mitral valve leaflet but no obvious vegetations. There was no right-to-left shunt.

The patient was treated with high dose penicillin G (3 weeks) for meningovascular neurosyphilis and vancomycin (3 weeks) followed by nafcillin (1 week) for presumed infectious endocarditis. Serial CSF studies during therapy showed improvement. Four abscessed teeth were also removed.

There was gradual improvement of the aphasia. Further questioning revealed the patient was homosexual and one year earlier was adequately treated for syphilis. His VDRL titer at that time was 1:32, however, the CSF was not examined. HIV antibody during this admission was positive.

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The Editor Comments



A Continuing Challenge

Omnes res perinde sunt ut agas. (All things are what you make them.)

Plautus, *Pseudolus*, 1. 578
(Act ii, sc. 1.)

I am not afraid of tomorrow, for I have seen yesterday and I love today.

William Allen White

I HAVE NOT WRITTEN any resolutions for the new year. Many consider new year's resolutions to be an annual ritual. The above quotations fulfill the attitude one should have each day of the year. Too often the annual statement of resolution is nothing more than empty ritual . . . thoughts for today, forgotten too soon.

Each new year brings new challenges. Responsibilities continue and our attitudes toward those responsibilities should have firmness in their resolve. That attitude pertains to the practice of medicine as much as to overall daily living.

Iowa physicians face many new challenges in the future. There are continuing challenges from the past as well. Our continuing challenge, of course, is to provide the best medical care possible within our capabilities. Some statistics show in spite of the cost of medical care, the abundance of physicians in the United States and the excellent health care facilities at our disposal, some glaring deficiencies continue. One that has been a concern to me is that infant mortality rates in the United States do not measure up to data from countries of comparable cultural status.

Our society is complex and much is dependent on legislative action. We as a profession must support proposals which do not reflect a selfish attitude. We must act for the betterment of medical care for all. Naturally, we have some proposals that will enhance the manner of health care delivery. We support measures which do not bind us to arbitrary regulations and laws which, by their enactment, defeat the more efficient ways of medical practice.

The IMS legislative committee has promulgated a series of priorities for 1989. Among others is support for a commission to evaluate licensure and the scope of practice. Opposition is voiced to therapeutic substitution. IMS will support agricultural health/environmental issues, as well as issues relating to transportation safety (support seat belt laws, required motorcycle helmets, moped regulation and restriction of all-terrain vehicles). We shall be concerned with smoking laws as well as laws allowing the use of fireworks.

These issues need not be the concern only of the medical profession. They are valid concerns of any person dedicated to the welfare of society rather than the selfish motives of a few. Let us hope our lawmakers represent all of us, not just the ones who voted for them. They are servants of society. Let us not be afraid of tomorrow; let tomorrow be a challenge for what we make of the future will be our own doing. — *M.E.A.*

Richard M. Caplan, M.D.

CME Notebook



The Need for CME Will Persist

A RECENT NEWS STORY reported many doctors who prescribe nicotine gum for patients who smoke really don't understand what the drug is doing or how it should be used. Apparently, some doctors prescribe it for smokers who have no real intent or plan to stop smoking, in which case the total nicotine burden is simply increased.

At about the same time, a flurry of news items appeared about the prescribing of the drug Accutane,® which can be very useful in treating severe acne and some other uncommon dermatologic conditions. The drug is a potent teratogen, however, and if used by a woman of childbearing age, the possibility of pregnancy must be excluded. Although they may have known this fact, physicians did not always do what was necessary to assure the avoidance of a catastrophe. The FDA and the drug's manufacturer have developed a precedent-making program that attempts to eliminate the hazard by appropriate screening and monitoring of women at risk.

How could anyone, reflecting, truly believe all would go smoothly in the appropriate use of these new drugs? All that we know about the imperfections of human beings, plus all that sociological research about the adoption of innovations has taught us, means some part of the population always learns and/or adopts slowly that which is new (including all that is necessary for safe use of the new).

A lecture that I heard recently dealt with a disease that was originally called muco-cutaneous lymph node syndrome. It now appears that lymph node enlargment is a relatively unusual clinical feature, and those interested in nomenclature are trying to drop that part of the name in favor of the eponymonic version, "Kawasaki disease." Another lecture dealt with recent findings, using specially prepared antibodies and electron microscopy, that help demonstrate the defect that occurs in the epidermal basement membrane of patients who suffer from epidermolysis bullosa.

I cite these miscellanea to illustrate a point you might consider obvious, namely, that unless all progress comes to a complete halt, and maybe even then, there will continue to be need for continuing education. The notion that medicine has been a learned profession is not a new idea, its roots having begun for Western Civilization in the time of ancient Greek glory. However, the idea that medical work required one to be an active life-long learner dates, in any meaningful way, mainly to the past century. I'm willing to predict, and certainly hope I'm right, that this need will continue long past the lifetime of anyone reading these words.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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Curious Cases

A Pain in the Gluteus

BRIAN FORD, M.D.
Spirit Lake, Iowa

IN JUNE, 1988 a 66-year-old woman with a history of diverticulosis came to my office complaining of a recurrent abscess on her left buttock. In April, 1988, she had an injection in this area of Zylocaine® and Depomedrol® for pain which was believed to be from a bursitis.

Following that injection, she developed an abscess that was incised and drained in May of 1988. She did quite well on oral antibiotics and the abscess had been healing.

She then moved to our town where she often resides for the summer and came in for further care of the abscess. With oral antibiotics and home health care provided by registered nurses, the abscess healed.

Five weeks after the abscess had healed over completely, the patient noticed pain in the same area. The pain was followed by spontaneous rupture and drainage in the left gluteal area once again. At this point, the abscess cavity was small and measured only ½ cm across and ½ cm deep.

Tom Throckmorton, M.D., a general surgeon on our staff, examined the patient. A sinogram showed that the abscess communicated freely with the sigmoid colon via a fistula passing through the left sacral notch.

A low anterior resection of the sigmoid colon followed by a drainage procedure of the pelvic abscess with excision of the gluteal fistulous tract was done. At the time of surgery, a small pelvic abscess also was found which contained 5-10 cc of frank pus.

The patient has done very well and is now one month past surgery. At this time, her gluteal wound is almost completely healed. We feel that her small size was a contributory factor in allowing this abscess and fistula to develop. At the time of hospital admission she weighed 84 pounds and was 5′ 2″ tall. Since leaving the hospital, she has gained about 15 pounds.

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BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED
CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088- 1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Please see brief summary of prescribing information, and reference on adjacent page.

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Summary.
Consult the peckage literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae,* and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea). 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever). 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis, elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

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The Emerging Personnel Shortage

In June of 1988, the unemployment rate for Iowa was 4%, while the unemployment rate for the entire United States was 5.3%. The U.S. rate is the lowest since 1974. Despite Iowa's recent economic problems and the potential impact of the recent drought, it appears Iowa will be following the trend of the rest of the country toward personnel shortages in many industries, including health care.

In addition to the shortage of physicians in some geographical areas, there is also a shortage of radiologic technologists, medical technicians, medical secretaries and receptionists for some group practices and clinics in Iowa. The demand for these people will increase and will probably spread to other positions such as medical assistants, billing clerks and other clerical positions.

Why the Shortage?

The first reason for the shortage will be the "baby bust." There are fewer youth entering the labor force in the United States and in Iowa due to the declining birth rate since 1964. The Iowa high school senior enrollments will drop over an 8-year period from 40,961 in 1983 to a projected 29,914 seniors in 1991. (See table.) This represents a 22% decrease in high school students going into the labor force.

Another reason for the emerging shortage is increasing options for young women in what has been predominantly a female-staffed office setting.

A third factor in the shortage of skilled medical staff employees is a decline in the number of radiology and medical laboratory training programs in the last 10 years. Though some of the remaining schools have had an enrollment increase during the summer of 1988, the numbers will still be fewer than the demand in the future.

IOWA HIGH SCHOOL SENIORS

School Year	*Enrollment*
1982-83	40,961
1983-84	38,729
1984-85	37,525
1985-86	35,906
1986-87	36,222
1987-88	36,956
1988-89	35,480
1989-90	32,599
1990-91	29,914

Source: Iowa Education Department

A fourth factor is the mismatching of public skills with some medical employment demands. Medical transcription is a good example. It takes patience, aptitude and ability to work in solitary conditions that are sometimes unattractive to those interested in traditional secretarial/clerical positions.

A fifth factor which will fuel the shortage is the increased probability of job changing by the working public in general. Today in the U.S., one in 5 people changes jobs each year and one in 10 switches careers. Some of this turbulence stems from the availability of positions elsewhere and the increasing attitude that no position is permanent given the layoff's, terminations and down-sizing many employees have experienced in recent years.

Next month's Practice Management column will discuss ways physicians' offices can cope with the impending employee shortage.

This article was authored by David Furneaux of Hamilton Associates, a personnel consulting division of McGladrey & Pullen, Des Moines.

James Stiles, M.D.

PRO Update



IFMC Medicare Review: Monitoring Quality

Editors' Note: This is the first in a series of articles written by Iowa Foundation for Medical Care physician leadership to inform IMS members of upcoming changes in the Medicare peer review organization (PRO) program.

MOST OF YOU ARE AWARE the Health Care Financing Administration (HCFA) has made significant revisions in the Medicare PRO review process. The Iowa Foundation for Medical Care (IFMC), Iowa's PRO, will institute these changes on April 1, 1989. We wish to familiarize Iowa physicians and hospitals with these changes before they occur.

Quality review is an area affected by the new guidelines. HCFA, which administers the Medicare program, wants greater consistency in methods used by PROs to identify and resolve quality of care concerns. HCFA has established a rating system to ensure a PRO's educational efforts and interventions are appropriate to the severity of the quality concern.

Once the new system is in place, IFMC physician reviewers will assign a severity rating of I, II or III to all quality problems. Level I will cover quality concerns without potential for significant adverse affects on the patient. Level II will be assigned to concerns with the potential to produce significant adverse affects. Level III will be used for instances in which poor quality of care has resulted in unnecessarily prolonged treatment, unnecessary readmission or complications such as anatomical or physiological impairment, disability or death.

The new system will allow the IFMC to pend less severe quality problems until a specific threshold has been reached. One point will be assigned to each level I problem, 5 points for each level II problem and 25 points for level III problems. These points will be used as guidelines to help the IFMC implement appropriate interventions.

If a provider accumulates 3 or more points in one quarter (or 5 points in 2 quarters), he or she will be notified in writing. If more intervention is needed, the provider will have the opportunity to discuss the case via telephone with a physician reviewer. Educational programs or focused review may be implemented.

The IFMC will evaluate level III concerns to determine the need for possible sanctioning and/or referral to the Board of Medical Examiners. Sanctioning is used primarily as a last resort, when a provider has demonstrated a clear inability or unwillingness to alter his or her practice pattern.

James Stiles, M.D., Cedar Rapids, is a family practitioner and is chairperson of the IFMC's Quality Assessment Committee.

The new quality review process will not affect a provider's right to appeal an adverse review determination. The process for re-review and reconsideration will remain the same. Before a quality issue is confirmed, the case must be reviewed by a second physician who specializes in the area appropriate to the case.

I realize many providers are concerned the new review changes may call for patient notification of quality problems. The IFMC will only notify a patient of a PRO review in which a payment denial has been made. HCFA is studying the issuance of payment denials based on quality determinations, but this practice is not called for under the April 1 review changes. Consequently, the IFMC will not communicate with patients on quality issues.

I believe the review changes will allow the IFMC to emphasize education as a way to resolve quality concerns. Often, the most effective education results from physician interaction, the component that distinguishes peer review from other forms of medical care review.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

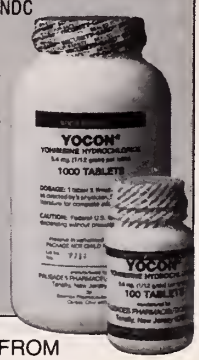
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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November 1988 Morbidity Report

Disease	Nov. 1988 Total	1988 to Date	1987 to Date	Most Nov. Cases Reported From These Counties
AIDS	0	41	34	NA
Amebiasis	0	16	35	
Brucellosis	0	1	3	
Chickenpox	441	7079	8062	Scattered
Campylobacter	18	425	274	Scattered
Cytomegalovirus	0	8	25	
Eatons Agent Infection	3	24	60	Black Hawk, Polk, Winneshiek
Encephalitis, viral	0	3	13	
Erythema Infectiosum	0	115	889	
Gastroenteritis (GIV)	2582	19553	15992	Scattered
Giardiasis	48	394	396	Scattered
Hepatitis, A	1	43	95	Polk
Hepatitis, B	1	77	104	Linn
Hepatitis, Non A-B	0	13	28	
Hepatitis type unspecified	0	3	7	
Herpes Simplex	67	902	1110	Scattered
Herpes Zoster	0	0	2	
Histoplasmosis	0	21	16	
Infectious mononucleosis	27	166	164	Scattered
Influenza, lab confirmed	0	110	67	
Influenza-like illness (URI)	4226	34959	33653	Scattered
Legionellosis	2	18	10	Lyon, Wapello
Malaria	0	2	6	

Disease	Nov 1988 Total	1988 to Date	1987 to Date	Most Nov. Cases Reported From These Counties
Meningitis				
aseptic	3	36	73	Linn
bacterial	13	99	78	Scattered
meningococcal	0	0	5	
Mumps	3	38	438	Polk, Story
Pertussis	4	34	57	Black Hawk, Lyon
Rabies in animals	8	158	254	Scattered
Reye Syndrome	0	0	0	
Rheumatic Fever	0	0	3	
Rubella (German measles)	0	0	1	
Measles	1	1	0	Lee
Salmonellosis	13	231	170	Scattered
Shigellosis	12	271	95	Scattered
Toxic Shock Syndrome	1	7	5	Madison
Tuberculosis				
total ill	5	52	40	Cedar, Linn, Montgomery, Polk, Winneshiek
bact. pos.	5	44	39	Cedar, Linn, Montgomery, Polk, Winneshiek
Typhoid Fever	0	0	0	
Venereal diseases				
Gonorrhea	204	2034	2715	Scattered
Chlamydia	561	4590	3307	Scattered
Syphilis	5	23	26	Linn, Pottawattamie, Scott, Sioux

Other Non-Reportable Diseases: Ureaplasm Urealyticum — 1, Marion



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IDPH Legislative Agenda

THE IOWA DEPARTMENT OF PUBLIC HEALTH has the opportunity, if not the obligation, to seek the necessary authority to respond to existing and emerging public health issues.

Some of the department's legislative proposals reflect the need to gather important information (e.g., the nature and incidence of traumatic injuries) in order to develop life-saving interventions. Other proposals result from existing data indicating a specific beneficial action, e.g., safety standards for swimming pools. Still other proposals address the need to update existing laws created to insure health care quality and accessibility, e.g., the Certificate of Need law.

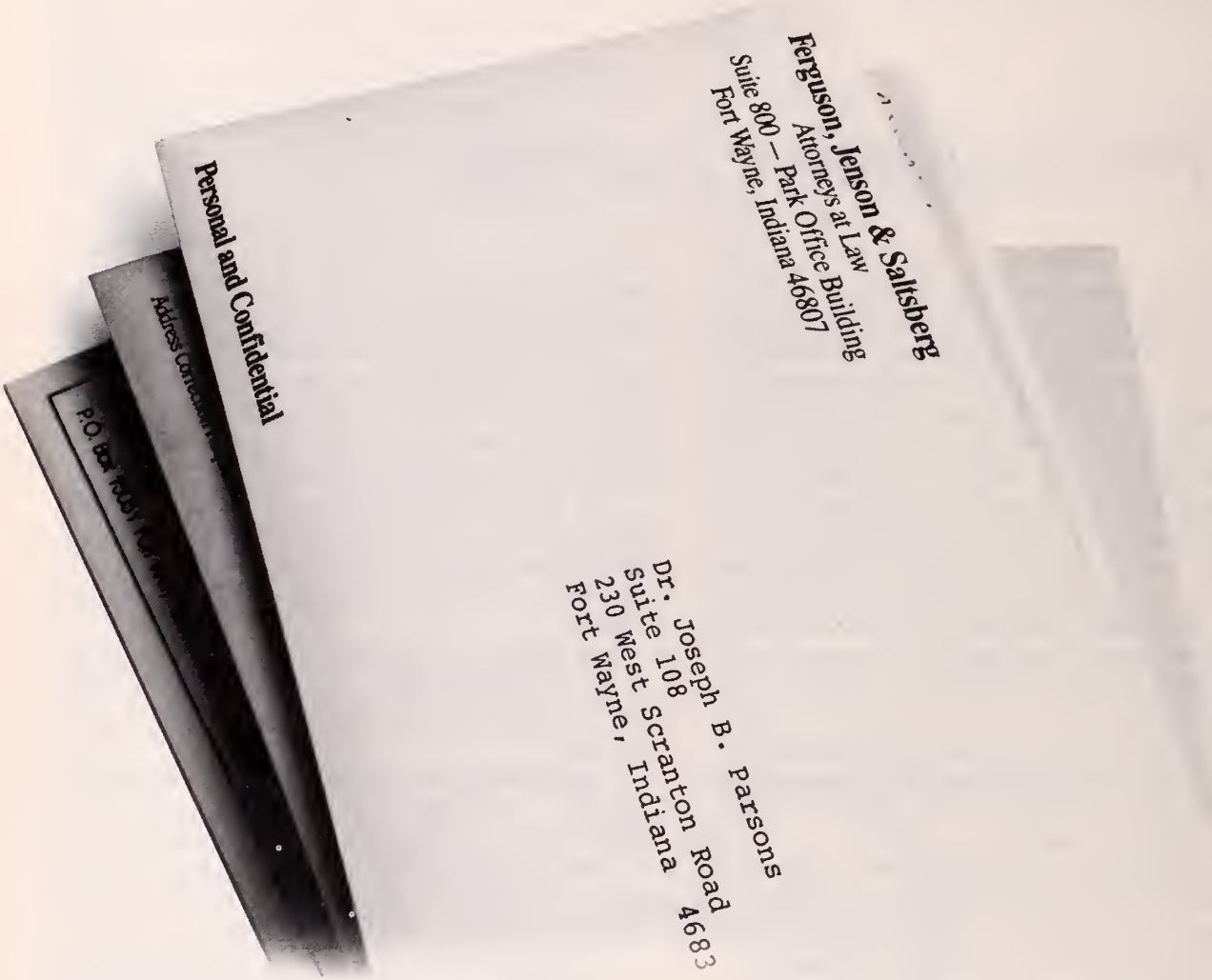
The following proposals will be submitted to the Iowa General Assembly by the Iowa Department of Public Health (IDPH) for the 1989 legislative session:

- **Certificate of Need (CON)** — Updates the CON law to better address the review of modern technology and accessibility for medically underserved (e.g., indigent elderly).
- **Termination of Pregnancy Reporting** — Requires reporting of all spontaneous and induced terminations of pregnancy prior to 20 weeks of gestation.
- **Vital Records** — Updates the process to better serve the public.
- **Substance Abuse** — Clean-up from reorganization; requires standards for treatment programs in hospitals; provides for the option for licensure fees; and amends the client fee payment system.
- **Emergency Medical Services (EMS)** — Allows certified First Responders to operate "automated" defibrillators and requires all EMS providers be mandatory reporters in suspected cases of child and adult abuse.
- **Swimming Pool Safety Standards** — Requires the (IDPH) to establish and enforce pool standards, to conduct onsite inspections, and to register and collect fees for the operation of swimming pools, spas and water slides.
- **Death Certificates** — Extends the time limit for filing medical certification and death certificates; reduces the time limit for notification of authority for final disposition of dead bodies.
- **Medical Devices** — Requires IDPH to evaluate major medical equipment and its use, and to provide technical assistance to medical facilities.
- **Non-ionizing Radiation** — Requires IDPH to regulate non-ionizing sources of radiation and to register tanning facilities.
- **Reporting Traumatic Injuries** — Requires health care practitioners to report selected traumatic injuries to IDPH.
- **Sales Tax Exemption for Maternal Health Centers** — Exempts Maternal and Child Health Centers (and other health services receiving public funds) from having to pay state sales tax on materials purchased for delivery of health services.
- **Professional Licensure** — Eliminates the requirement to have the director of IDPH approve accredited colleges and eliminates board of health approval of barber/cosmetology rules.
- **Homemaker Home Health Aids & Public Health Nursing** — Changes the procedure of determining the funding allocation formula from the department's annual appropriation bill to the administrative rule process.
- **Tattooing** — Requires IDPH to regulate the practice of tattooing.

For more information contact Mike Coverdale, IDPH legislative liaison, 515/281-4342.

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

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Medical News/Products and Programs

HOSPICE EDUCATION INSTITUTE — This non-profit organization based in Essex, Connecticut, offers its HOSPICELINK service to all who need referrals to local hospices, or wish to learn how hospices help terminally ill and bereaved persons. This free service, begun in 1986, answers more than 400 calls each month. The national toll-free number is 800/331-1620. HOSPICELINK maintains a computerized and frequently updated directory of hospices in the United States. It does not provide medical advice or psychological counseling, but staff members will listen sympathetically and give limited informal support to callers who wish to discuss personal problems relating to terminal illness or bereavement.

The Hospice Education Institute is not affiliated with any one hospice, but serves all hospices and all members of the public. There is no charge for any HOSPICELINK service. The Hospice Education Institute also offers continuing education to health professionals, sponsors seminars on hospice care and provides other educational and informational services. The Hospice Education Institute is supported by corporate grants and by the generosity of the public.

REDUCE PREGNANCY TESTING TO ONE SIMPLE STEP — *WAMPOLE® ONE-STEP hCG is a new pregnancy test for urine and serum that reduces hands-on time while providing clear, easy-to-read results. The unique test device requires less than one minute for set up with no additional steps prior to reading results. No multiple reagents, time-dependent additions, washing, pretreatment of sample or waiting between steps is required. WAMPOLE® ONE-STEP hCG Pregnancy Test has 25 mIU/ml sensitivity and can detect a positive result as early as one week after implantation or 4-5 days before a missed menses. The kit is stable at room temperature for 12 months and can be used with a minimum amount of technician training and time. It includes test devices, reaction tubes, specimen dispensers and a workstation. WAMPOLE® ONE-STEP hCG is available from all major laboratory suppliers in 24 and 96 test kit sizes. For further information, contact Nicholas J. Martin/Product Manager, Wampole Laboratories, Division of Carter-Wallace, Inc., Cranbury, New Jersey 08512, 1/800/257-9525.*

THE AMERICAN ASSOCIATION OF OFFICE NURSES — This non-profit corporation invites all physicians to enroll their office nurses in the Association. A.A.O.N. was organized to provide its members with continuing opportunities for professional growth and development in the care, treatment and education of medical patients. For further information, a membership application and a copy of the publication, *The Office Nurse*, contact Mary Ann Jones, RN, MA, President, or Joy Logan, Executive Director, at: The American Association of Office Nurses, 196 Kinderkamack Road, Park Ridge, New Jersey 07656; 201/391-2600.

TRANSCRANIAL DOPPLER — *The Food and Drug Administration will allow Ultramed Inc., 2549 U.S. Route 1, Rd #1, North Brunswick, New Jersey 08902-9715, 201/821-4440, to market a device that measures blood flow in the brain, increasing the odds of detecting clogged arteries which may lead to stroke and even possibly reducing the risk of brain damage in stroke-related surgery. The new system, called Transcranial Doppler or TCD, used in combination with the company's ultrasound vascular imaging device, helps physicians make a more complete examination. In a recent study in Switzerland, TCD increased the odds of detecting diseased vessels that cause stroke by over 20%, indicating a complete exam requires Transcranial Doppler. Other office ultrasound imagers do not have an integrated TCD. "The addition of TCD makes our equipment even more suitable for the office based physician," Bruce Schnitzer, Vice President of Ultramed said. "Rather than sending patients to outside labs, doctors can conduct these scans themselves rapidly and accurately. TCD is on the leading edge of technology in this field."*

About Iowa Physicians

The following physicians were recently elected as officers/board members of the Iowa Academy of Family Physicians at the Academy's 40th annual meeting in Des Moines: **Larry Boeke, M.D.,** Cedar Rapids, president; **James Kimball, M.D.,** Des Moines, president-elect; **Don Soll, M.D.,** Denison, vice-president; **Harold Eklund, M.D.,** Des Moines, secretary/treasurer; **Elizabeth Burns, M.D.,** Iowa City, board member (2-year term); **Roger Davidson, M.D.,** Harlan, board member (3-year term); **Laine Dvorak, M.D.,** Humboldt, board member (3-year term); **Wayne Rouse, M.D.,** Boone, delegate; and **Milt Van Gundy, M.D.,** Marshalltown, alternate delegate. **Dr. Richard Francis** has joined the staff of Park Clinic Medical Center and Franklin General Hospital in Hampton. Dr. Francis received the M.D. degree from the University of Connecticut School of Medicine, Farmington, Connecticut and served his residency at New Britain and Mt. Sinai Hospital, Hartford, Connecticut. Prior to locating in Hampton, Dr. Francis practiced in Lafayette, Alabama. **Dr. David Hanson** has joined the Black Hawk Area Family Practice Center in Waterloo. Dr. Hanson received the M.D. degree from the U. of I. College of Medicine and completed a residency at Broadlawns Medical Center in Des Moines. Dr. Hanson previously practiced at the Albert Lea Clinic, P.A. in Northwood, Minnesota. **Dr. Stephen Harrison,** Fulton, was awarded the Golden Ea-

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gle Award. The award is given to a resident of the River Bend School District who has provided outstanding service to students and residents. Dr. Harrison was cited for his many hours of service, especially in the area of physical examinations for athletes.

Dr. Lloyd Filer, professor emeritus of pediatrics and **Dr. Ekhard Ziegler,** professor of pediatrics, both U. of I. College of Medicine researchers, have been awarded the 1988 nutrition award by the American Academy of Pediatrics. **Dr. Cynthia Kortum** has joined Sheldon Family Practice Associates. Dr. Kortum received the M.D. degree at Creighton University School of Medicine at Omaha, Nebraska and had practiced medicine in Huron, South Dakota for the past 6 years. **Dr. Frank E. Forsythe,** Newton, has retired after nearly 37 years of family practice. Dr. Forsythe received the M.D. degree at the U. of I. College of Medicine. **Dr. Gary Smith** has begun practice at Sheldon Family Practice Associates. Dr. Smith received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and completed his residency at Sioux Valley Hospital, Sioux Falls, South Dakota. Prior to locating in Sheldon, Dr. Smith practiced for 10 years in Newman Grove, Nebraska. **Dr. Alan Fisher,** Council Bluffs, has joined the Mercy Hospital staff as an emergency room physician. Dr. Fisher formerly practiced at Midlands Family Medicine, also in Council Bluffs. **Dr. Elmer Bean,** Council Bluffs, has retired after 38 years of pediatric practice. Dr. Bean received the M.D. degree at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina and served his residency at Children's Hospital, Washington, D.C.

Dr. Scott Helmers, Sibley, was recently honored as Iowa Family Doctor of the Year by the Iowa Academy of Family Physicians. Dr. Helmers has practiced medicine in Sibley since 1972. **Dr. L. Douglas Oss,** Sioux City, has been elected president of the Iowa Dermatological Society. **Dr. William B. Roudybush,** longtime Muscatine physician, has retired after 34 years of family practice. Dr. Roudybush received the

(Please turn to page 40)

Manuscript Information for Authors

Papers submitted must be double spaced; triple spaced between paragraphs on 8½ x 11 pages. A title page and a short abstract summarizing the article should be included. Due to space constraints, brief papers (ideal length is 5 double spaced typewritten pages) have a better chance of timely publication. If possible, 2 copies should be submitted.

All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

The paper will be reviewed by the publications committee and a follow-up letter will be sent to the author, either accepting or rejecting the article.

All material is subject to editing by the staff copy editor to assure clarity and good grammar and to conform to *IOWA MEDICINE* style and format. The author will receive galley proof of the paper prior to publication to check for inaccuracies, but no rewriting may be done after the manuscript is set in galleys.

Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

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M.D. degree at the U. of I. College of Medicine. **Dr. Jack T. Swanson** was elected president of the American Academy of Pediatrics, Iowa Chapter. Dr. Swanson practices at McFarland Clinic in Ames. **Dr. John A. Bovenmyer** has joined **Dr. Dan A. Bovenmyer** of Davenport in the practice of dermatology. Dr. John Bovenmyer received the M.D. degree from the U. of I. College of Medicine and completed his residency at U. of I. Hospitals and Clinics in Iowa City. **Dr. Mahmoud M. Wahba** has joined the staff of Floyd Valley Hospital in Le Mars. Dr. Wahba received the M.D. degree at the Faculty of Medicine, Alexandria University, Alexandria, Egypt and served his residency at Delaware State Hospital in New Castle County, Delaware. Prior to locating in Le Mars, Dr. Wahba was in private psychiatric practice in Minot, North Dakota where he also was an assistant clinical professor of psychiatry at the University of North Dakota School of Medicine. **Dr. Jeffrey Allgood** has joined the Wilton Health Center. Dr. Allgood received the M.D. degree at the U. of I. College of Medicine.

Deaths

Dr. Albin C. Bergstrom, 84, Missouri Valley, died October 6. Dr. Bergstrom received the M.D. degree from the U. of I. College of Medicine and completed his residency at Harper Hospital, Detroit, Michigan. He began practice in Missouri Valley in 1931 and retired in 1974.

Dr. Joseph C. Torbert, 45, Akron, died October 31 at his home. Dr. Torbert received the M.D. degree at Creighton University School of Medicine, Omaha, Nebraska where he also served his residency. He began practice in Akron in 1974.

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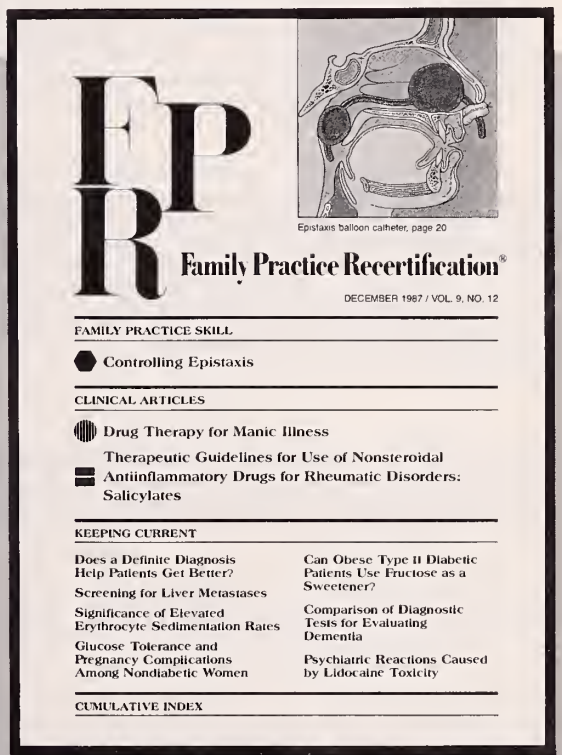
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CHIEF OF MEDICINE, RESIDENCY DIRECTOR — The University of Iowa College of Medicine and Veterans Administration Medical Center (VAMC), Des Moines, Iowa, invite applications for VAMC Chief of Medicine. The successful candidate will serve as the Associate Director of an Internal Medicine Residency Program equally divided between VAMC and Iowa Methodist Medical Center. Major responsibilities include directing all VAMC Department of Medicine clinical services, physician recruitment, supervision of teaching programs and planning for a major inpatient clinical renovation scheduled for 1990. Applicants should be academically oriented with administrative abilities and demonstrate excellence in teaching and patient care. Candidates must be Board Certified and qualify for a University of Iowa clinical faculty appointment. The Des Moines VAMC is a 250-bed acute medical surgical hospital delivering a broad range of multispecialty outpatient services. Submit CV to Russell Glynn, M.D., Chief of Staff, VAMC, 30th and Euclid, Des Moines, Iowa 50310. 515/271-5853. EOE.

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Legislative Vigilance

THE AMERICAN MEDICAL ASSOCIATION'S concern with protecting public health is a vital component of its legislative program in Washington every year. The AMA has been vigilant in representing the interests of physicians and patients in ongoing debates over health policy. The AMA has launched major efforts to stop ill-conceived government initiatives to save money at the expense of the poor or aged.

In short, the AMA is extremely effective in influencing health policies which eventually affect every American. Following is an impressive list of recent legislative initiatives supported by the AMA with an eye toward the public good.

SMOKE FREE SOCIETY . . . Through legislation and public information programs, the AMA has drawn constant attention to the consequences of smoking. The latest efforts include AMA support of a bill banning smoking on most domestic airline flights.

AIDS . . . The AMA has been a leader in coping with the AIDS epidemic, outlining a comprehensive approach for prevention and control of the disease that has been used as a blueprint for governmental planning. During 1988, the AMA lobbied hard for passage of a bill calling for an AIDS commission composed of medical and scientific experts in the field of AIDS treatment and research. The bill also expands federal funds for AIDS research and education. AMA lobbying strategy helped stave off hostile amendments which would have gutted the bill. Another bill containing provisions on testing and counseling strongly supported by the AMA was passed by the House and is awaiting conference action. The AMA was able to achieve significant safeguards in both bills including protection from civil and criminal liability for medically appropriate disclosures to spouses and contacts.

MEDICARE CUTS . . . Strong AMA lobbying of the House and Senate Budget Committees helped avoid new administration-backed cuts in Medicare.

ALCOHOL WARNING LABELS . . . The AMA endorsed legislation to require appropriate medical warnings on alcohol beverages.

POLYGRAPH BILL . . . Specific protections for workers from misuse of polygraphs in employment settings was recently signed into law. The AMA, through lobbying and testimony before Congress, strongly endorsed this measure.

PLASTIC HANDGUNS . . . AMA lobbying helped convince Congress that handguns largely composed of nonmetallic products should be banned. Passed by the House as part of its major drug abuse reform bill, the measure now awaits action in the Senate where it is being tied to more controversial handgun control legislation.

TRAUMA CARE . . . AMA facilitated development of compromise language that would provide federal financial assistance for states to develop the trauma care component of their emergency medical services.

As AMA President James Sammons, M.D. comments, "In 1986 we recommended legislation requiring smoke detectors and automatic sprinklers in all high rise buildings. The AMA has declared snuff dipping and tobacco chewing hazardous to your health and encouraged the elimination of boxing. The list is quite long."

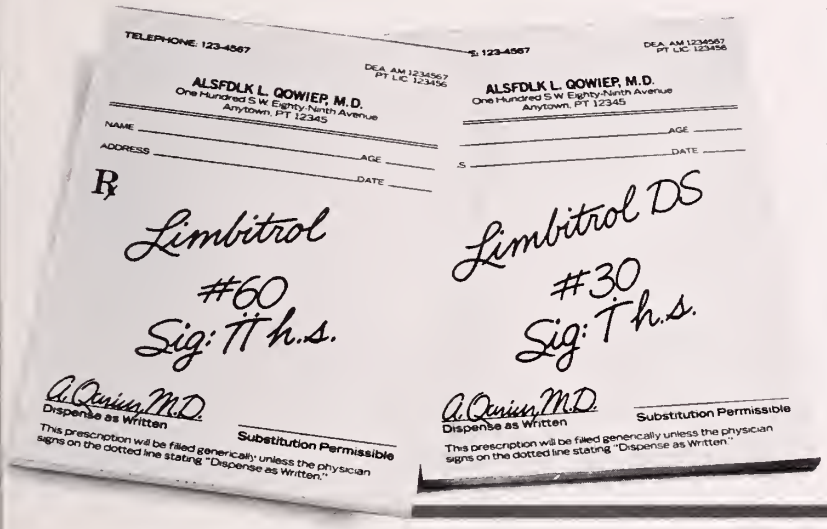
"We are proud of our legislative programs in Washington which have been effective in influencing health policy."

January 1989

Iowa Medicine

In moderate depression and anxiety

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week improvement in somatic symptoms[1]
- 50% greater improvement with Limbitrol in the first week than with amitriptyline alone[2]



Protect Your Prescribing Decision: Specify "Do not substitute."

Limbitrol®

Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) Ⓝ

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References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner VP, *et al: Psychopharmacology 61:*217-225, Mar 22, 1979.

Limbitrol®Ⓝ
Tranquilizer—Antidepressant
Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (*e.g.,* operating machinery, driving).

***Usage in Pregnancy:* Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: *Cardiovascular:* Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. *Psychiatric:* Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. *Neurologic:* Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. *Anticholinergic:* Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. *Endocrine:* Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. *Other:* Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: *Double strength (DS) Tablets,* white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and *Tablets,* blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 50.

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In the depressed and anxious patient

See Improvement In The First Week...[1]

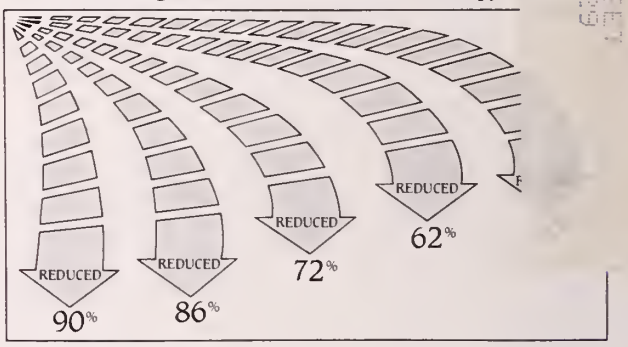
And The Weeks That Follow

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- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week reduction in somatic symptoms[1]

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

Percentage of Reduction in Individual Somatic Sy
During First Week of Limbitrol Therapy*



*Patients often presented with more than one somatic symptom.

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IowaMedicine

February 1989

Journal of the Iowa Medical Society



The R.N. Shortage: Nursing's Perspective

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This month's *IOWA MEDICINE* features the very first 4-color cover in the history of the magazine. Fittingly, this beautiful photo of Moraine Lake (Banff National Park, Alberta, Canada) was taken by Marion Alberts, M.D., *IOWA MEDICINE'S* scientific editor. IMS members who dabble in photography are urged to submit their own photos for possible use on our cover.

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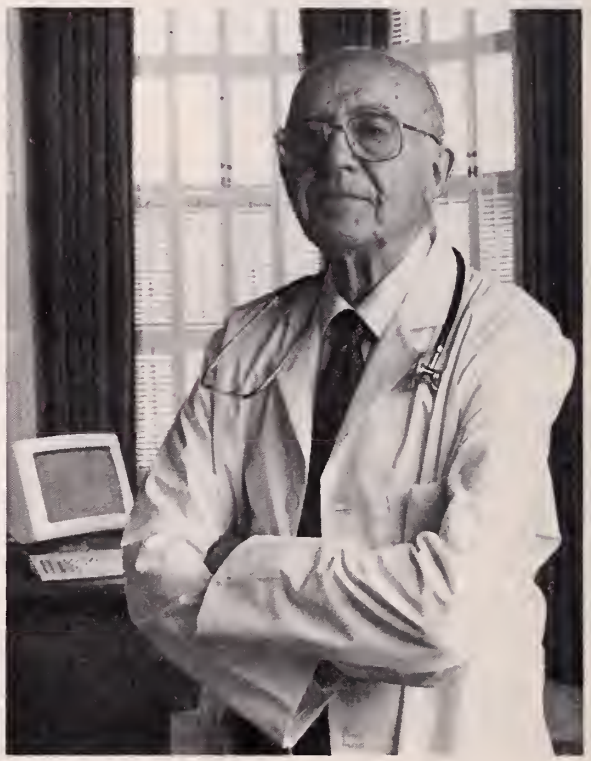
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Daniel M. Youngblade, M.D.

President's Privilege



A Problem That Must Be Solved

A 1987 AMERICAN HOSPITAL ASSOCIATION survey found 78% of hospitals needed more nurses. Almost one-fifth of large urban hospitals took beds out of service temporarily due to the nursing shortage. Estimates showed 12-18% of hospitals across the U.S. had unfilled nursing positions. Nursing school enrollment has dropped over 25% (30% in Iowa) since 1984, a trend some blame on low salaries and poor image.

Evidence from nursing organizations, the AHA and the HHS indicates the problem will worsen. Many nursing school students are already licensed practical nurses and registered nurses seeking higher education. In response, the AMA will implement pilot programs to evaluate the quality and cost effectiveness of RCTs in delivering bedside care. Robert Whinery, M.D., an IMS delegate to the AMA, discusses the RCT proposal in this month's "Questions and Answers" feature.

No consensus of agreement has surfaced on how to solve the nursing shortage. Nursing groups are talking of redesigning nursing staffing systems, increasing technologic information to conserve nurses' time, increasing salaries and benefits and increasing state and federal aid for nursing education. No direct suggestions have been made for increasing the number of nurses.

The "significant and persistent" shortage of nurses, most acute in nursing homes, urban hospitals, critical care units and surgical units, must be solved! We must mend fences with nursing over the misunderstood RCT proposal. Nursing and physician organizations must join together and find a workable solution to the current and future nursing shortage.

I urge all Iowa physicians to become knowledgeable about the problem and speak positively with local nurses about this important matter.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

Registered Nurse Shortage: A Health Care Crisis

COY BAKER, R.N., M.A.
Des Moines, Iowa

The author, president of the Iowa Nurses Association, discusses the nursing shortage and the response of nursing organizations.

THE CURRENT SHORTAGE OF registered nurses is eroding quality health care in the nation and in Iowa. The nursing shortage is real. It exists and must be managed now.

Enrollment in nursing programs has declined by 30% in Iowa since 1983 and this decline is projected through 1995. On the other side of the coin, the employment rate among nurses is 80%. Throughout Iowa, nurses are experiencing the debilitating effects of the nursing shortage. Many are coping with the problem by leaving hospitals and nursing for other careers. They seek better working conditions and better compensation.

In its 1988 Statewide Plan for Nursing, the Iowa Board of Nursing (IBON) states the supply of RNs working the field in Iowa has steadily declined since 1980. The demand for RNs, demonstrated by the ever-narrowing ratio of nurses to patients in care beds, has increased at the same rate. The Board predicts by the beginning of the next century, there will be a shortfall of 1,000-8,000 RNs in Iowa. This figure will represent a 12% decline for the closing decade of the present century.

Iowa nurses are actively working to address the shortage. A state Tri-Council consisting of Iowa's 4 major nursing organizations has been formed. Patterned after the National Tri-Council, the state Tri-Council gives Iowa's nurses "one unified voice." This makes Iowa a leader in efforts by professional nursing to cope with the shortage problem.

The Council's purpose is to "coordinate strategies, both short term and long range, to combat the escalating shortage of nurses in the state and to identify and address related issues." The Council hosted a statewide nursing summit on December 6, 1988, with 28 nursing specialty organizations invited and 24 attending.

Developing Strategies

According to Colleen Goode, R.N., president of the Iowa Organization of Nurse Executives, "The purpose of the summit was to bring nursing leaders from all organized nursing groups together to develop strategies to manage the nursing shortage in Iowa."

To prepare the summit attendees for their work sessions, a thorough review of national and state activities related to the shortage was presented by Dr. Myrtle Ayde-

Coy Baker is assistant director of continuing education at Iowa Methodist School of Nursing, Des Moines.

lotte, Dr. Geraldine Felton and other Iowa nursing leaders. Some items addressed included nurse extender models utilized across the U.S., strategies for managing the nursing shortage suggested in the report of the Federal Commission on Nursing, the Iowa Board of Nursing's Statewide Plan for Nursing and the work of the Governor's Task Force on Nursing.

With all this background knowledge in hand, the committee members went to work to develop strategies to manage the nursing shortage. Specialty groups such as oncology

'Patterned after the National Tri-Council, the state Tri-Council gives Iowa's nurses one unified voice.'

nurses, NAACOG, emergency nurses, etc., along with nurses from industrial organizations, LPN organizations, public health, nursing home organizations, nurse recruiters, state organizations and many other organized nursing groups deliberated, collaborated and produced a first draft of Iowa strategies.

The summit members agreed to utilize the language of the federal commission's report and place the Iowa strategies in the commission report's final format. This document is being prepared for circulation to all summit members. A second summit meeting is being planned to finalize the strategies. Each nursing organization will then sign onto the document. The strategies will be disseminated by each nursing organization to its membership. The summit meeting was a productive and positive effort by organized nursing to manage the shortage in Iowa and assure patients in Iowa will continue to receive quality nursing care.

Societal Issue

A legislative task force is also working to address the shortage. According to Phyllis Crouse, president of the Iowa League for Nursing, "The current nationwide shortage of nursing personnel is serious and Iowa is no exception. The nursing shortage is not only an issue for nursing but one for society in general. The impact of the nursing shortage, if not addressed, will be inadequate health care for Iowans.

"The Iowa Legislature, recognizing this threat, mandated the Iowa Department of Public Health, in conjunction with the Iowa Board of Nursing, establish a task force to examine the nursing personnel needs of rural and urban areas of Iowa and recommend measures to insure an adequate nursing supply, especially to underserved areas. The task force on the shortage of nursing personnel was established and the recommendations will be reported to the legislature in January, 1989. The task force recognizes several of the strategies will require further study and analysis."

Medicine can support nursing in 2 ways during the management of this shortage — first, by assisting in the improvement of nursing's public image. One factor leading to declining enrollment in nursing schools is the perception of nursing as a subservient career. Nurses must be acknowledged as valuable colleagues in the health care system. As a leading member of the health care team, the physician can positively influence public opinion by working toward reversal of this damaging image.

'The Iowa Board of Nursing predicts by the beginning of the next century, there will be a shortfall of 1,000-8,000 RNs in Iowa.'

In the November, 1988 issue of *The New Physician*, medical students in Albany Medical Center are working with nurses and learning practical skills they may never be taught in school. David Shapiro, third year medical student, thinks the program is excellent. "You get to see exactly what the nurses are doing. The amount of knowledge they have amazed me. Some of the medical students really just don't understand what a nurse's job is. They feel anyone can be a nurse, therefore they're dispensable."

(Continued next page)

Perhaps this attitude is changing. Marie Manthey, a nurse consultant in Minneapolis, states, "The days of doctors feeling free to yell at a nurse when things aren't going well are going to pass." But, much remains to be done.

Second and equally important is recognizing the nursing shortage as a health care problem. Nurses are the experts in determining solutions. We need physicians' assistance as colleagues in this crisis to work with us in implementing our solutions.

The shortage is extremely complex. Contributing factors include increasing patient acuity, expanding technology, wider career opportunities and over declining college age population. It is apparent that without full consideration of these complexities, professionals outside nursing will come up with oversimplified solutions. These solutions will not work and in fact may compound the problem.

Nursing cannot solve medicine's problems, nor can medicine solve nursing's problems. In this shortage crisis, medicine and nursing must work together to implement nursing's strategies.

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Nurses Express Formal Opposition to RCTs

IN JUNE OF 1988, in response to the growing shortage of bedside nurses, the American Medical Association introduced a proposal to create a new category of caregivers — Registered Care Technologists (RCTs). The proposal has proven controversial, with organizations representing registered nurses voicing unanimous opposition.

On January 11, 1989, the Iowa Tri-Council (the Iowa Association Colleges of Nursing, the Iowa League for Nursing, the Iowa Nurses Association and the Iowa Organization of Nurse Executives) released a formal position statement on RCTs. Following is an excerpted version of that statement.

POSITION . . . All National Tri-Council and Iowa Tri-Council members oppose the AMA's proposal to develop a new category of health care worker called Registered Care Technologist.

Reasons for this opposition include:

- The RCT proposal would decrease quality of care because these bedside caregivers would be inadequately prepared.
- The RCT proposal would increase the likelihood of fragmentation of care.
- The RCT would make the nursing shortage worse because RCTs would be recruited from an already diminishing pool of high school students.
- Nursing already has an educational program for nurse assistants, LPNs and RNs.
- Nurses would be asked to supervise RCTs and place their own professional license in jeopardy because of lack of adequate preparation to care for people.
- The RCT proposal will not meet the current or projected needs of patients.
- The RCT proposal does not address the reasons for the nursing shortage such as adequate compensation, longevity benefits, participative management, etc.

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Robert D. Whinery, M.D.

Questions and Answers



RCTs: A Physician's Viewpoint

The author, an Iowa City ophthalmologist and IMS delegate to the American Medical Association, discusses the AMA's proposal to create a new category of nursing — Registered Care Technologists.

What was your initial reaction to the American Medical Association's RCT proposal?

The nursing shortage is a critical and urgent problem in many areas, especially larger cities. Though we are rather sheltered from some problems in the midwest, shortages are present here as well.

As an AMA delegate from Iowa, I have been very concerned about the Registered Care Technologist (RCT) proposal by the AMA Board of Trustees. My mind has changed greatly since the initial proposal and as time goes by more dimensions of the issue come into focus.

It is safe to say when this concept was first presented to us prior to the June AMA Annual Meeting it was a surprise. Like many delegates, I went to that meeting prejudiced against the AMA's action. However, after listening to much discussion on all sides of the issue, the problem proved to be much more complex than I realized.

What developments have occurred since the initial proposal?

I discovered at the June, 1988 meeting that AMA leadership has, for a number of years, asked the nursing profession to make recommendations to solve the nursing shortage. This request fell primarily on deaf ears. The response of nursing hierarchy is to continue supporting abolishment of diploma schools and LPN programs. I have always been somewhat confused as to why nursing supported baccalaureate and 2-year programs to the exclusion of 3-year diploma schools.

However, since June much has transpired through discussions between nursing and the AMA. The initial outcome was very poor. There were some positive recommendations from the nursing associations which would lead to more respect, better pay and better working conditions. However, some requests such as one year off every 10 years and the ability to try a new position in a hospital for as long as 3 months while the old job was kept open were less than realistic.

What have you heard from nurses?

Initially, I was bombarded with letters from deans of nursing schools and many nurse administrators throughout Iowa and elsewhere. As the December AMA Interim Meet-

ing drew closer, I began hearing from nurses who are actually in the front lines of patient care.

Their approach was somewhat different. They expressed the fact they are understaffed and underpaid and anxious for improvement in their working conditions. They believe these problems have not been addressed by the nursing associations. I later learned many Iowa hospitals have developed programs similar to the RCT. These programs are not universally organized, but do include people trained on-the-job to alleviate the overworked nurses.

The person "in the trenches" is too often not heard. I found at the AMA Interim Meeting in Dallas that I was not the only person hearing these things from nurses. The President's address included many of the same observations.

What do you believe are the AMA's goals with the RCT proposal?

All along, I have suspected the AMA was trying to bring the nursing shortage into acute focus and that the RCT proposal was, in a sense, an attention getting device. There are now recommendations from the AMA that the nursing shortage be solved through strong local programs developed in cooperation with nursing.

In addition, there was strong universal support for facilitating recruitment and education of nurses to provide bedside care and economic and professional incentives to attract and retain high quality individuals. This is, after all, what must be done. The pilot RCT program continues but will be closely monitored.

I am very encouraged to realize a similar approach is being used in many of our Iowa hospitals. There is a critical shortage of bedside care providers. Though it is our desire to improve the nursing climate, our primary desire must be to help patients. What was first seen by nurses as a "slap in the face" is, I hope, evolving into a cooperative venture that will address all aspects of this problem.

Editor's Note: The nursing profession's concerns regarding the AMA's RCT proposal are discussed in a sidebar to this month's lead story by Coy Baker, R.N., president of the Iowa Nurses Association.



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3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

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WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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Recent Books

Bergman, Ronald A., Sue Ann Thompson, Adel K. Afifi and Faysal A. Saadeh, 1988, *Compendium of Human Anatomic Variation*, Text, Atlas and World Literature, Urban & Schwarzenberg, Baltimore, Maryland, Munich, West Germany, 353 pages, $198.00. This compendium reflects a tremendous effort by the authors to index the large number of human anatomic variations that have been observed. The various organ systems are discussed individually and specifically; then the atlas completes the book. The atlas depicts sketches, drawings and photographs of many anatomic variations. The index is very complete, e.g., 708 references for the muscles, 1371 for the cardiovascular system. This is a monumental compendium from the anatomy department of the U. of I. College of Medicine and the American University of Beirut. It will serve as an excellent reference especially to anatomists, surgeons and pathologists.

Kelly, Jeffrey A. and Janet S. St. Lawrence, 1988, *The AIDs Health Crisis: Psychological and Social Interventions*, Plenum Publishing Corporation, New York, New York. After a concise review of the medical aspects, transmission and risk factors of AIDS, this book primarily concerns the psychosocial aspects of this major health threat. The authors state their primary focus is on interventions that can prove to be useful in preventing AIDS and assisting persons already affected by the syndrome. There are numerous references provided for the reader seeking further information.

Diamond, Seymour and Vye Amy Diamond, 1988, *Hope for Your Headache Problem*, International Universities Press, Madison, Connecticut. A series of case histories with discussion of the authors' experiences and concepts of the headache problem. The author directs a private clinic for the treatment of headaches in Chicago. Appendixes include an update on the treatment of headaches, a review of the authors' inpatient care for the difficult patient and the Diamond Clinic's dietary plan for headache patients. There is also a glossary of terms related to headaches.

Stoline, Anne and Jonathan P. Weiner, 1988, *The New Medical Marketplace: A Physician's Guide to the Health Care Revolution*, The Johns Hopkins University Press, Baltimore, Maryland, paperback $12.95, hardcover $26.50. The economics of medical practice is involved in a major revolution. This book reviews the economic and sociologic aspects of health care in the past and the changes to be seen in the future. There is no doubt the physicians of the future will be less able to master their own destinies. This is "must reading" for all physicians but more so for medical students and younger physicians.

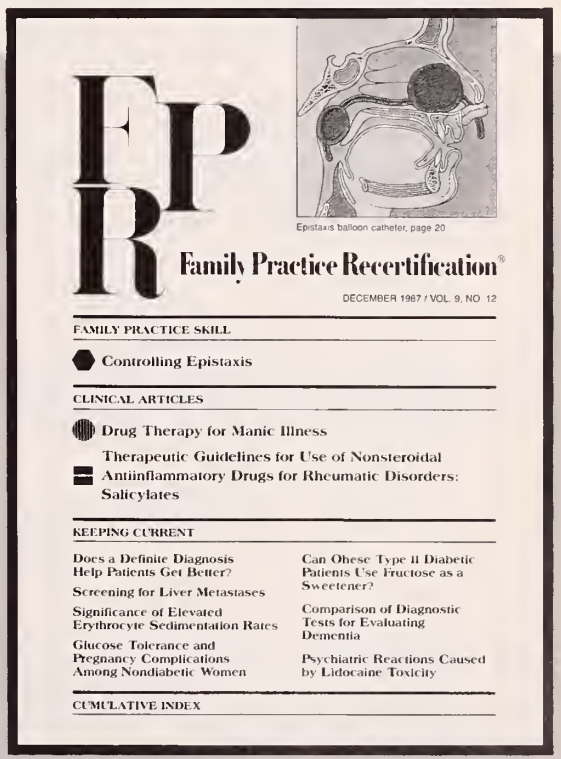
Weibert, Robert T. and William A. Norcross, 1988, *Drug Interactions Index*, 2nd edition, Medical Economics Books, Oradell, New Jersey, paperback $27.95. Significant drug interactions and their possible clinical implications are compiled in this valuable book. This expanded edition adds 184 interactions; over 50% new material. The name index contains both generic and trade names. From the number assigned the interactions can be determined in other sections of the book. The type of reaction is briefly noted and suggestions made regarding use of the specific drug. This is a valuable reference book for the busy practitioner.

Day, Robert A., 1988, *How to Write and Publish a Scientific Paper*, 3rd Edition, Oryx Press, Phoenix and New York. The author, a professor of English, has had extensive experience in directing the publishing program of the American Society for Microbiology. This is truly a "how to" manual. The numerous subjects discussed are brief, concise and well-written. Appendices include selected journal title word abbreviations, common errors in style and spelling, words and expressions to avoid, prefixes and abbreviations for SI units and accepted abbreviations and symbols.

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MARCH 15, 1989

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Hyperbaric Oxygen Therapy

MICHAEL C. WITTE, D.O., FACP
Des Moines, Iowa

The author describes the history of and potential medical uses for hyperbaric oxygen (HBO) therapy, a useful adjunct to more established therapies.

HYPERBARIC OXYGEN (HBO) THERAPY is the application of 100% oxygen by inhalation in an environment that is at a barometric pressure greater than the earth's atmosphere. It is not a new therapy and has a much longer history than other present day therapies such as coronary artery bypass surgery, radiation therapy or even antibiotics. Pressurized treatment with air has a history of use by the world's navies dating back roughly 300 years and use of 100% oxygen is now in its 100th year. Several developments in the 1960's contributed to the acceptance and expansion of hyperbaric medicine:

- The explosion of recreational diving in the United States (more than 2 million avid divers);
- Recognition by the Air Force that serious decompression sickness does occur with exposure to altitude (hypobaric environments);
- An ever increasing body of evidence that HBO therapy was useful treatment for intravascular gas embolism of any cause, carbon monoxide poisoning, gas gangrene and difficult refractory wounds of soft tissue and bone.

Unfortunately, some early enthusiasts of HBO were applying its use to conditions unsupported by clinical research such as senility, transient ischemic attacks, emphysema and cancer, damaging the reputation of HBO as a useful adjunct to more established medical conditions. Through world-wide research over the past 2 decades, HBO therapy is beginning to regain wide spread acceptance by medical and surgical specialities.

There are now over 200 hyperbaric oxygen chambers in the United States capable of treating patients. The Undersea and Hyperbaric Medical Societies (UHMS) Conference at the University of California in 1975 was followed by the excellent text, *Hyperbaric Oxygen Therapy* by J. C. Davis and T. S. Hart, which contains over 700 references and serves as the primer on hyperbaric oxygen.

Physiological Effects of HBO Therapy

The actual mechanisms of HBO action are varied. The effects from the increased pressure are due to compression of bubble size in the circulation (air-embolism) and tissues (decompression sickness) as well as vasoconstriction. The physiological effects assist in 1) overcoming the effects of tissue hypoxia or distal

Dr. Witte is medical director of the hyperbaric medicine program at Mercy Hospital Medical Center in Des Moines.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF FEBRUARY

ischemia (reaching levels of up to 2,000 millimeters of mercury in blood); 2) countering the effects of various poisons or toxins; 3) enhancing the oxidative burst of polymorphonuclear cells in tissue macrophages, so important for intracellular antimicrobial killing; 4) potentiating the antimicrobial properties of aminoglycocides, vancomycin and sulfonamides; and 5) stimulating the growth of fibroblasts, osteoblasts, osteoclasts and granulocytes, resulting in enhanced wound healing.[1]

Clinical Application

In 1976 the executive committee of the Undersea and Hyperbaric Medical Society established the Committee on Hyperbaric Oxygenation. It is a national scientific organization that "critically reviews, analyzes, and monitors: 1) the clinical, experimental, and physiological aspects of HBO use; 2) its clinical efficacy, cost effectiveness and safety; 3) the methods of avoiding its misuse and use."[2]

The report of the committee in 1977 and its revision in 1986 were prepared for the use of health insurance carriers, administrators and health professionals. The committee's documentation of the clinical indications of HBO therapy is accepted by the national Blue Cross and Blue Shield as well as most other health insurance companies. Table 1 lists the accepted conditions for hyperbaric oxygen.

TABLE 1

ACCEPTED CONDITIONS FOR HYPERBARIC THERAPY

air or gas embolism
carbon monoxide poisoning
acute smoke inhalation and assumed carbon monoxide/cyanide poisoning
crush injury, compartment syndrome and other acute traumatic ischemias
acute cyanide poisoning
decompression sickness
enhancement of healing and selected problem wounds
diabetic wounds
venous stasis ulcers
decubitus ulcers
arterial insufficiency ulcers
exceptional blood loss
gas gangrene
necrotizing soft tissue infections
creptitant anaerobic cellulitis
progressive bacterial gangrene
necrotizing fasciitis
non-clostridial myonecrosis
Fourneier's disease
miscellaneous necrotizing infections in the compromised host

Toxicities

Like any drug, oxygen can have toxic effects under hyperbaric conditions, particularly on central nervous system tissue and the lungs. Treatment protocols have been established to keep this potential toxicity to a minimum. Other risks during treatment are due to the potential adverse effects of pressure (barotrauma), which can act upon sinuses, ears, teeth, gastrointestinal tract and the lungs. However, safety procedures have been established and are a daily part of the Mercy chamber unit's activities to eliminate or reduce these side effects.[3]

References

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Serum Cholesterol of Residents in North Iowa

SHIONG S. LEE, M.D.
STEPHEN CHA, M.S.
MING-SHING LEE
Mason City, Iowa

A survey of serum cholesterol levels was done on 219 residents in north Iowa. Population reference values of serum cholesterol for the community were developed. Data indicate age is an influential factor in both sex groups. Consumption of oral contraceptives appears to be a significant factor in increased serum cholesterol levels in females. Although cigarette smoking seems to augment serum cholesterol level superficially, its relationship is not statistically significant in the study.

IN COOPERATION WITH the campaign of the American Heart Association on cholesterol screening program, the North Iowa Medical Center in Mason City, Iowa, offered serum cholesterol determinations to residents of north Iowa (mainly Cerro Gordo County) between February 9-13, 1987. This study was undertaken to survey the total serum cholesterol levels of healthy northern Iowa residents and to evaluate the possible influences of sex, age, cigarette smoking and oral contraceptives on serum cholesterol levels. These data may be used as the population reference values of serum cholesterol for the community. They may provide basic information for future study of cardiovascular risk factors in north Iowa.[1]

Dr. Lee is a pathologist at the North Iowa Medical Center in Mason City. Stephen Cha is a statitician with Cancer Center Statistics at Mayo Clinic, Rochester, Minnesota. Ming-Shing Lee is a freshman student at Massachusetts Institute of Technology, Cambridge, Massachusetts.

Materials and Methods

Cholesterol testing was on a voluntary basis. Any healthy resident presenting with no eating or drinking for 8 hours was enrolled in this study. Participants were north Iowa residents enjoying a normal healthy life with no known clinical cardiovascular disease. Each was asked to complete a standard form of individual cholesterol data provided by the American Heart Association.[2]

Collection of blood was done at the local shopping center, with the participant seated. A 20-gauge needle and a standard vacuum tube without a preservative or anticoagulant were used. The clotted blood was centrifuged and serum total cholesterol performed on a duPont ACA autoanalyzer (cholesterol oxidase method).

There were 219 participants, 94 men and 125 women, ranging in age from 11-84. Serum cholesterol levels were stratified by age and sex groups; then the percentiles of each subgroup were derived. The mean of cholesterol levels and standard deviation of each subgroup were calculated. Due to limited clinical data and insufficient precise information to define hypertension, overweight and de-

(Continued next page)

gree of physical activity of participants, only 2 factors, namely cigarette smoking and oral contraceptives, were further evaluated for the influence of serum cholesterol level by paired T test and P value determination.

Results

The results of serum cholesterol levels and percentile rankings by age and sex of participants are summarized in Table 1. To avoid disagreement on some aberrant cases in both upper and lower limits (above 90 and below 10 percentiles) only 25, 50 and 75 percentile ranges are listed for simplicity of clinical application.

Because only 13 women were recorded as oral contraceptive users, 13 cases of non-users with a good match on age (within 3 years and in the same stratified age group) were selected for comparison of serum cholesterol levels.

Regarding the effect of cigarette smoking on serum cholesterol levels, only 10 pairs with good matching of age were available from each sex group for statistical analysis. The results are shown in Table 2.

TABLE 1

SERUM CHOLESTEROL (MG/DL) PERCENTILE RANKING BY AGE AND SEX IN NORTH IOWA

Age (Yr)	N	Mean (mg/dl)	SD	Percentile* 25	50	75
			(Females)			
11-30	11	184	27	167	175	205
31-40	16	184	42	152	180	203
41-50	13	223	41	188	210	247
51-60	30	230	27	210	223	257
61-70	38	240	41	204	252	267
71-80	19	241	36	213	236	277
>81	5	271	21	254	272	289
			(Males)			
11-30	5	177	22	157	178	197
31-40	20	208	32	191	206	215
41-50	10	255	99	206	231	268
51-60	19	236	58	190	239	253
61-70	29	224	43	199	219	256
71-80	11	232	52	208	223	263

N: Number of cases
SD: Standard Deviation
* Percentile derived from total serum cholesterol levels of 125 female and 94 male participants by frequency distribution analysis. Overall age and serum cholesterol level show positive relationship by ANOVA (analysis of variance) and regression analysis (P = 0.001).
The cholesterol levels have been rounded up to integer to removed decimal fraction.

Discussion

To the best of our knowledge, the population reference values of total serum cholesterol have not been established in north Iowa. Although our data are derived from a relatively small series (219 cases), the reference values for different age and sex groups in this study are important since opportunities to screen different age and sex groups of a healthy population on a voluntary basis are few. Moreover, if future study of cardiovascular risk factors needs to be carried out, these data can provide basic information regarding the north Iowa population.

Our results, concurring with previously reported surveys, show age infuence on serum cholesterol levels in both sexes (Table 1).[3-6] Therefore, age should be considered before drawing a conclusion of hypercholesterolemia in any individual, despite the recommendation of 200 mg/dl as the realistic "target" level

TABLE 2

INFLUENCES OF CIGARETTE SMOKING AND ORAL CONTRACEPTIVES ON SERUM CHOLESTEROL

	Male (Smoker)	Male (Nonsmoker)	Female (Smoker)	Female (Nonsmoker)	Oral Contraceptive (female) (User)	Oral Contraceptive (female) (Nonuser)
No. of cases	10	10	10	10	13	13
Mean of serum cholesterol (mg/dl)	274.1	217.2	210.2	195.1	229.4	216.2
Mean of difference (serum cholesterol difference between paired groups)	47.9		−2.5		25.9	
SD of mean difference	102.1		48.4		27.0	
Paired T value	1.484		−0.163		3.458	
P value	P = 0.17 NS		P = 0.87 NS		P < 0.005 Significant	

SD: Standard deviation
NS: Nonsignificant

for some form of therapy proposed by the National Institute of Health.[7]

Cigarette smoking as a major risk factor for coronary heart disease or myocardial infarction has been well established.[8-13] However, its direct influence on serum cholesterol level is not straightforward.[14,15] From our series, the influence of cigarette smoking on serum cholesterol appears to be non-significant in both sex groups (Table 2).

Consumption of oral contraceptives has proven to be a significant factor ($p < 0.005$) in increased serum cholesterol in our female group. The link between oral contraceptive administration and elevation of serum cholesterol has been stressed in previous studies.[16-22] This effect is believed to be due to the progestin component or to combined estrogen-progestin activity of the Pill.[22,23] The diversity of oral contraceptive formulations and the duration of their usage have confounded attempts to elucidate the underlying complex mechanism. Nevertheless, our analysis has shown the net effect of oral contraceptives on serum cholesterol levels in healthy female residents in our community. This may be more useful in drawing association between contraceptives and serum cholesterol concerning future studies of the cardiovascular risk profile for our population.

References

References noted in this paper are available either from the authors or the editors of *IOWA MEDICINE.*

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This project has been in effect since 1983. Dental services are offered in Iowa City at the University Hospital School Dental Clinic and in 11 private dental offices located in Ames, Carroll, Cedar Falls, Charles City, Council Bluffs, Creston, Decorah, Des Moines, Mason City, Sioux City and Sioux Center. For details call Arthur Nowak, Dental Director or Tricia Campanelli, Project Coordinator, at 319/356-1517.

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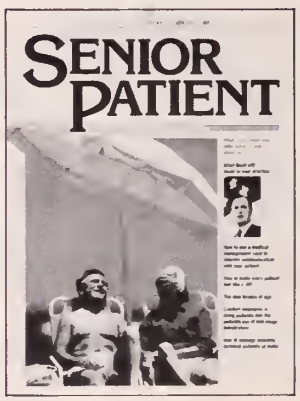
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Marion E. Alberts, M.D.

The Editor Comments



To Nurses

The trained nurse has become one of the great blessings of humanity, taking a place beside the physician and the priest and not inferior to either in her mission.

—Sir William Osler (1849-1919)
"Nurse and Patient" *Aequanimitas, with other addresses*

IF WE PAINTED A MURAL of the history of the nursing profession we would create a story of variable social influences. The first nursing was the responsibility of the women of a social element — the men sought food; the women cared for the children and the aged. From the 1500s to the early 1800s the history of nursing is a very dark picture. The religious elements of society had a variable influence. The division of the church, Protestant or Catholic, resulted in a decreased interest in charitable works.

One bright highlight occurred in 1633 with the founding of the Order of Sisters of Charity which in Catholic countries represented a reform in nursing. That era became shadowed over the next century until 1836 when the Modern Order of Deaconesses in Protestant countries and the Sisters of Mercy in Catholic countries developed a new era in nursing. Social responsibility became more popular. Care of the sick became a social responsibility which spread worldwide. In 1860 the Nightingale School of Nursing was founded at St. Thomas Hospital in London. This represented a radical experiment wherein a school of nursing was associated with a medical school of distinction.

The profession of nursing from then on was increasingly influenced by social and economic influences to become the noble profession it is today. The physician/nurse relationship has progressed from a servile status to a stature of prominence exemplified by a coordinated effort in the care of the sick. Many of the changes in the status of nurses have come about in the last 4-5 decades. From a position of menial tasks along with providing care and comfort to the sick, nurses of today are true professionals. In them a trust is given that is truly a reflection of their training and professional expertise.

We see in the last panels of the mural of nursing history the responsible acts by nurses in operating suites, neonatal intensive care nurseries, cardiac centers and in care of injured and seriously ill in land and air transport services. The advanced education attained by many nurses provides better care and better training of younger nurses. Osler demonstrated his wisdom in his statement to the nurses of Johns Hopkins Hospital in 1897. Nursing is an art filled with love and compassion; a profession that is noble to be followed.

This issue of *IOWA MEDICINE* examines issues in the nursing profession. We also, by this theme, salute the nursing profession. In the words of Osler in another talk to nurses at Johns Hopkins Hospital ". . . in your passport shall be the blessing of Him in whose footsteps you have trodden, unto whose sick you have ministered, and for whose children you have cared." — *M.E.A.*

Richard M. Caplan, M.D.

CME Notebook



Cure and Care

YOU HAVE PROBABLY THOUGHT RARELY about the story of leprosy (now preferably called Hansen's Disease) as it has appeared and still exists in the United States. If I asked you to name a contagious disease of great importance now (go ahead, do just that), I suspect you'd think of AIDS, although you truly have lots of choices. Part of the reason AIDS pops into mind is because we do not have a cure, and, because of complex social oddities that you already know, the disease happens to carry with it an enormous burden of stigma along with its biological devastation.

Those very words could be said of Hansen's Disease until very recent times. In much of the world the disease and the stigma are about as great as they ever were.

Here is an exerpt from a statement made in 1861 by the chaplain who served a leprosarium in Tracadie, New Brunswick, Canada:

> Should God in his unsearchable justice or in His infinite mercy, be pleased to inflict me with this disease, I would have to share [the patients'] captivity and company. Then I would have to spend the remainder of my days under the same restrictions and privations, but the most unbearable of all would be: No Physician, no Doctor at hand!

This cry of anguish seems so strange to us, perhaps because today we are likely to respond: "But that doctor wouldn't have been able to do a thing to treat leprosy." If I've indeed expressed your thought, then I submit it is a measure of how your thinking has become oriented toward cure (that is, attacking the disease) and drifted from care (that is, doing small acts of comfort and consolation of enormous importance). The patient experiences an *illness*. The doctor who treats only the *disease*, even if his tools cure it, has attended only partially to the patient's illness. Patients often endure disease more successfully if the physician otherwise cares for them.

The same day I read that chaplain's statement I heard a talk given by a psychologist who told a group of CME directors that patients ask 2 things from their doctor: 1) Listen to me! and 2) Be nice to me! It's easy to dismiss his counsel as an enormous oversimplification of a hugely complex issue. But that dismissal would deny the vital importance of his words. Therapeutic vigor need not exclude the vigor of caring.

Please don't think my words mean that modern physicians are only warehouses full of therapeutic success but empty of caring. Nor were the doctors of the past all superb examples of dedicated caring. But in America's present medical climate, our patients want and need our emotional support and our intellectual problem-solving. We should listen always to the patient's plea: Listen to me! Be nice to me!

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.
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- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)
Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever): 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia.

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Meeting the Emerging Employee Shortage

Editor's Note: Last month's Practice Management column discussed factors contributing to an anticipated employee shortage.

THE IMPENDING EMPLOYEE shortage can be dealt with in a number of ways.

Increase Salaries

Although many practices, groups and clinics have good pay levels and work environments, the labor shortage will probably cause a need to increase salaries to compete with non-medical pay scales. There are food servers at Burger King outlets in Massachusetts who start at $8.00 an hour and receive raises of $.25 an hour every 90 days they work for the chain. In addition, they receive $1.00 per hour for child care and discount memberships at local health clubs. This example is extreme, but it underlines some pressures that will be felt in Iowa's medical environment in the near future.

Increase Benefits

To recruit and retain employees, it will be necessary to address your present benefit structure. Increasingly, many employees change jobs not because of a pay increase, but because of a better benefit package. Areas to consider are some type of health insurance and a modified form of paid vacation and sick leave in combination.

If your practice already has these benefits for full-time employees, you may need to include other benefits. Among the alternatives to consider are benefit options rather than rigid benefits. Also, with more employees wanting to work part-time, it will be necessary to consider increasing benefits for part-time employees.

More Flexibility in the Workplace

Among options you may need to consider to recruit and retain a good staff will be more flexible clerical schedules and job sharing by part-time employees. Another option some practices already use is off-site employment. A medical secretary picks up dictation tapes and types them at another site. With the emerging technologies already in place in many hospitals, it is only one more step to do some of your staffing with "telecommuting."

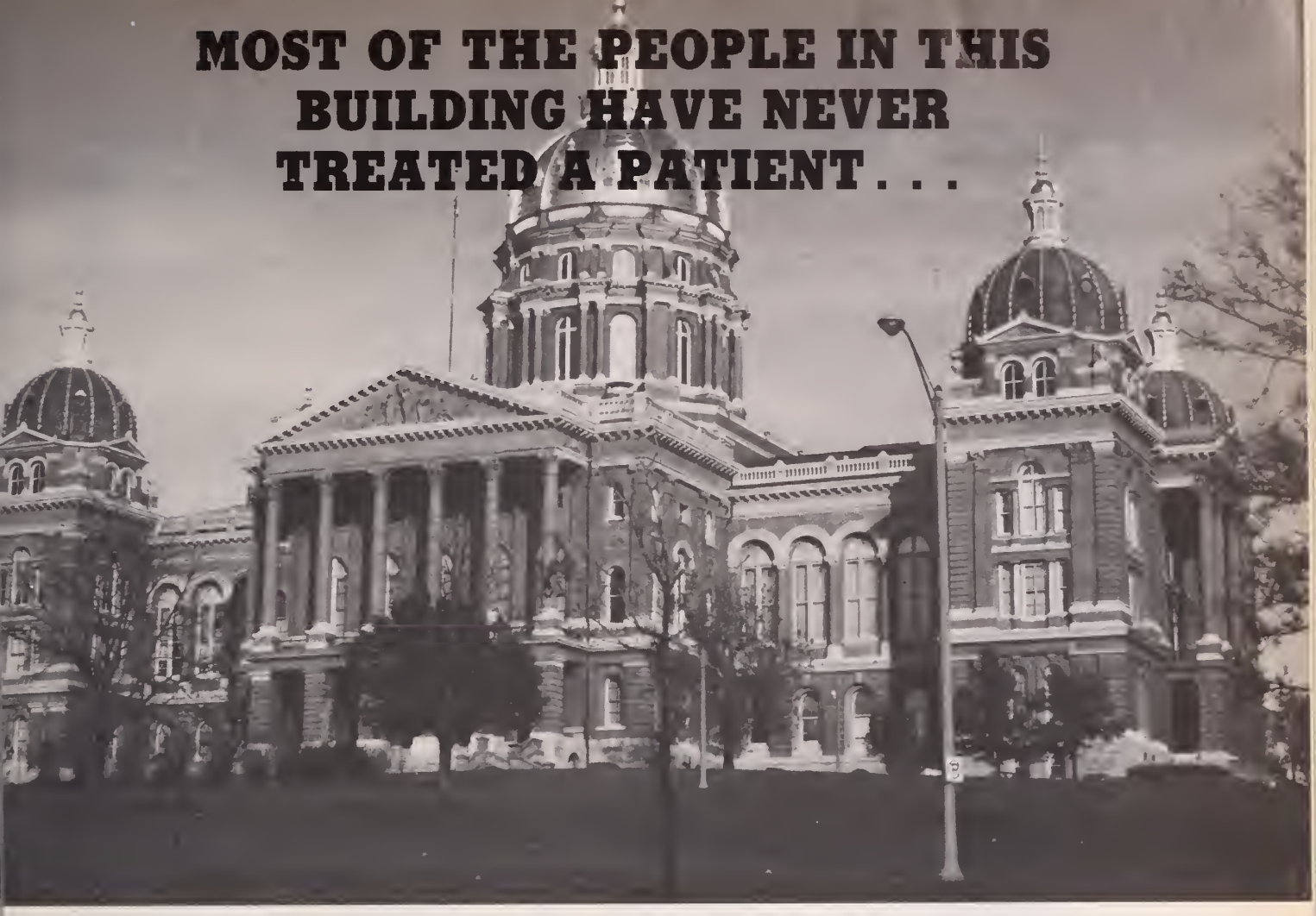
Telecommuting allows an employee or a medical transcription service bureau to call in by phone line to activate a tape system and then type at the off-site office as they listen to the tapes. This typing can be done on mobile keyboards or stationary keyboards at another office or in the home. When workers have finished the copy, they send a signal through the telephone line and medical dictation is printed out at the group or clinic site on the printer.

Professional Management of Staff

There will be more need to have professional management staff in your office or to engage the services of consultants. These services will be necessary to maintain a productive staff in the increasingly competitive environment.

This article was authored by David Furneaux of Hamilton Associates, a personnel consulting division of McGladrey, Hendrickson and Pullen, Des Moines.

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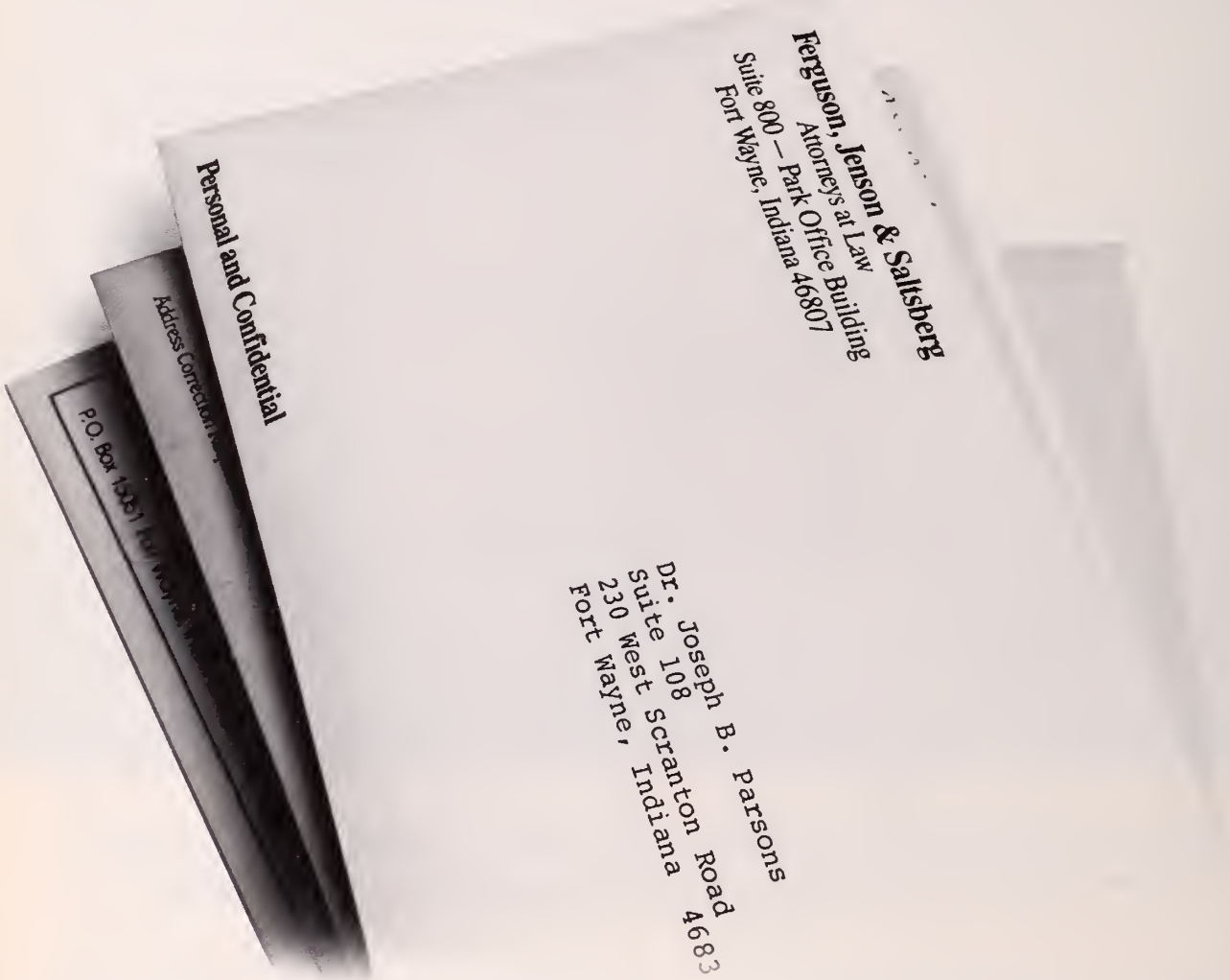
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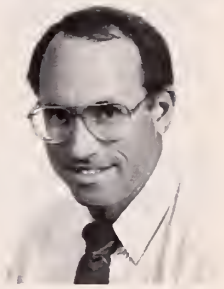
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John E. Dixon, M.D.

PRO Update



DRG Validation

(This is the second article in a 4-part series on Medicare PRO requirements. John E. Dixon, M.D. is a family practitioner from Clinton, Iowa. Dr. Dixon is secretary of the IFMC Board and chairperson of the IFMC's Internal Validity Committee.)

As part of Medicare and Medicaid review, the Iowa Foundation for Medical Care (IFMC) must validate the DRG assigned in a percentage of hospital admissions. This review is conducted to ensure the hospital received the appropriate reimbursement. A DRG change does not affect patient care and should not alter the medical record. (More information on changes in DRG validation will appear in the winter issue of IFMC News.)

Because DRGs are derived from the physician's diagnoses, this article discusses questions considered by physician reviewers in DRG evaluation. We hope this will reduce the number of DRG changes in the future.

Are the principal and secondary diagnoses appropriately identified? According to the Uniform Hospital Discharge Data Set (UHDDS), the principal diagnosis should be "the condition established after study to be chiefly responsible for the hospital admission." Other (secondary) diagnoses are "all conditions that coexist at the time of admission, that develop subsequently, or that affect the treatment received and/or length of stay." For example, patients with chronic obstructive pulmonary disease (COPD) are rarely admitted because of the COPD itself. Often, the admission is necessitated by a related condition such as pneumonia or bronchitis. COPD should then be listed as a secondary diagnosis.

Did the care provided treat the condition listed as the principal diagnosis? This is especially important in bronchial or cardiovascular conditions. If oxygen and/or anti-anginal medications relieve a patient's chest pain, angina may be a more appropriate diagnosis than chest pain. (EKG and cardiac enzyme results should be considered before making a final determination.)

Do laboratory results, x-ray studies, nursing notes and other evidence support the principal and secondary diagnoses? Make sure abnormal laboratory results are addressed in the record. I recently reviewed a case coded "pneumonia" by medical records personnel — presumably due to infiltrates on the chest x-ray. However, the attending physician wrote "non-specific chest pain" in his attestation statement, with no mention of the x-ray. Without further information, I was unable to validate either diagnosis. Failure to discuss abnormal laboratory or x-ray results may also constitute a quality issue.

Does the attestation statement reflect information supplied earlier in the medical record? Make sure you explain unusual treatment programs or contradictory diagnoses prior to signing the attestation statement.

Clear and thorough documentation is the key to determining an appropriate DRG. If the documentation enables the physician reviewer to answer "yes" to these questions, the DRG is probably correct. There are exceptions, however. Coding principles may dictate a certain DRG even though the DRG does not match the principal diagnosis. When in doubt, listen to your coding professionals.

Medicated Aerosol Delivery

THERE IS A PREVAILING BELIEF the best method of aerosol delivery is the gas-driven hand-held nebulizer. As a result, inhaled medicated aerosols are frequently prescribed for hospitalized patients using the gas-driven nebulizer. This method of delivery consumes significant personnel resources; and surprisingly, there is little evidence the gas-driven nebulizer is better than the metered dose inhaler (MDI).

The MDI, when accompanied by proper instruction, has been well documented to be an equally effective method of aerosol delivery. The MDI also provides advantages because it involves patients in their own care and prepares them for discharge and post-hospital long-term care.

There exists a need to assess current literature specific to both methods in an effort to identify the most effecive and efficient method of medicated aerosol delivery.

Aerosol Characteristics

Medicated aerosols produced by nebulizers and metered dose inhalers (MDI) range in size from 0.5-35 microns. Only those particles between 1 and 5 microns are efficiently deposited in the lower respiratory tract. Only about 10% to 12% of the output from an MDI and 1% to 5% of that from most jet or ultrasonic nebulizers is actually deposited below the larynx in the pulmonary airways. In spite of the inefficiency of the aerosol systems, minute but highly effective doses of drug are deposited onto the respiratory tract mucosa.[1]

The position of aerosols is governed by physical principles that apply to particles of varying sizes. Larger particles settle as the result of inertial impaction in the curved passages of the upper airway or are filtered out by the nose, or at the divisions of the large airways.The remaining particles mainly settle under gravitational force by sedimentation, and this occurs in the more distal airways where most pulmonary pathology is located. The very small particles behave more like a gas, and they become effective only if they are given a chance to be absorbed by the alveolar mucosa. This process, which relies on Brownian motion, is time-dependent and occurs only to an appreciable extent during breath-holding.

Efficacy of Aerosol Delivery Systems

Current systems for delivery of medicated aerosols include MDIs, gas-driven nebulizers and MDIs with spacers. It has been demonstrated there is no advantage to aerosol delivery with intermittent positive pressure breathing (IPPB).[2]

MDIs offer many advantages. They are portable and readily available, inexpensive, offer efficient nebulization of the medication and protect contents from physical, chemical and biological contamination.[1]

Of primary importance in prescribing an MDI is assuring the patient receives adequate instruction. Studies have shown 14%-89% of patients use improper technique. There is a negative correlation between the number of steps missed in the proper use of an MDI and the percent increase in FEV_1.[3]

The following steps assure maximal delivery of the aerosol: shake the inhaler, hold the inhaler upright, exhale normally, place the inhaler between the lips, actuate the canister at the beginning of inspiration, inhale slowly and deeply, hold breath as long as possible — up

This article was written by James E. McGowan, M.S., R.R.T., Director and Twila J. Whipple, B.A., R.R.T., Home Care/Quality Assurance Coordinator, Department of Respiratory Therapy, U. of I. Hospitals and Clinics. It was edited by John Kasik, M.D.

TABLE 1

CANISTER INHALERS

Oral Inhalation Products				
Product Class	*Generic Name*	*Brand Name*	*Dose per Actuation*	*Actuations per Canister*
Beta-2-agonists				
	Albuterol	Proventil, Ventolin	90 mcg	200
	Epinephrine Bitartrate	Medihaler-Epi	160 mcg (base)	300
	Isoproterenol Sulfate	Medihaler-Iso	80 mcg	300
	Metaproterenol Sulfate	Alupent	650 mcg	300
	Terbutaline Sulfate	Brethaire	200 mcg	300
Steroid-containing Products				
	Beclomethasone	Beclovent, Vanceril	42 mcg	200
	Triamcinolone Acetonide	Azmacort	100 mcg	240
Anticholinergic Agents				
	Iprathropium Bromide	Atrovent	18 mcg	200
Mast Cell Stabilizing Agents				
	Cromolyn Sodium	Intal	800 mcg	200

The increased availability of bronchodilators and steroids in MDI form and based upon an equivalent benefit when compared to the gas-driven nebulizer method, the MDI appears to then be the method of choice.

to 10 seconds, breathe out slowly and wait at least one minute between puffs.

MDIs with add-on spacers improve delivery of a drug to the lungs by correcting problems of hand-breath discoordination. Spacers may prove beneficial in reducing the pharyngeal candidiasis that occurs with inhaled corticosteroids.[4] In adults who properly use the MDI, the spacer devices do not seem to offer any further advantages over the MDI alone.[5]

While IPPB aerosol therapy has largely been abandoned, medicated aerosols are still commonly delivered by gas-driven or ultrasonic nebulizers. Although there is much support to prescribe MDIs when possible, there may be patients who require use of a gas-driven nebulizer or MDI with spacer because of their marked dyspnea, anxiety, poor hand/breath coordination or inability to inhale aerosol from an MDI. Infants and children, the handicapped and elderly may also experience problems using the MDI. These patients may benefit from aerosol delivered by the gas-driven nebulizer or an MDI with add-on spacer.

Cost Effectiveness

Cost benefit comparisons between the MDI and gas-driven nebulizer system have only recently been reported in the literature. Costs associated with aerosol therapy were an accepted part of such therapy. This was in part promoted by a reimbursement system which supported such practices.

However, with the advent of prospective payment, it becomes necessary to review cost against benefit and quality of current practices. The primary goal of this paper is to promote the use of procedures in aerosol therapy in terms of the best possible methods of delivery without compromising quality.

It is well documented in current literature that there exists no significant difference in the efficacy of bronchodilator therapy between the gas-driven nebulizer and MDI when the MDI is accompanied by proper instruction. Jasper and colleagues reported a potential savings of $253,487 per year in their institution alone when switching from the gas-driven nebulizer to the metered dose inhaler.[6] Associated costs are divided into 2 major categories: equipment (including medication) and personnel time.

The gas-driven nebulizer consumes approximately $1.25 in equipment and $9.90 in personnel time when utilizing a standard 43-minute delivery period as recognized by the American Association for Respiratory Care Uniform Reporting Standards.[7] These costs incurred with the gas-drive nebulizer method represents cost per treatment. The MDI consumes approximately $15.80 in equipment

(Continued next page)

costs (inhaler and spacer) and $13.80 in personnel time.

Utilizing the Uniform Reporting Standard for MDI teaching, 43 minutes of time is invested in initial teaching and one followup. These costs, associated with the MDI method, represent cost per patient. This method also has the advantage of teaching the patient how to use an MDI after discharge.

Thus, the MDI method has a potential for substantial savings to both the patient and the hospital. The patient consumes less resources while hospitalized and assumes more responsibility for his long-term care through discharge tutelage associated with the MDI method.[4, 8] Gervais and Be'gin suggest approximately 90% of currently provided aerosol therapy utilizing the gas-driven method could be switched to the MDI method without a change in quality of therapy delivered if accompanied by proper instruction.[9] Based on delivery of 44,800 gas-driven therapies delivered at University of Iowa Hospitals and Clinics during 1987-88, substantial savings for both patient and hospital could result given cost figures provided.

Medication Availability

A decade ago bronchodilator availability packaged in the MDI form was very limited. Beclomethasome was a commonly available steroid while most bronchodilators of longer duration were only available in stock quality. This is no longer the case and, as shown in Table 1 (see previous page), the latitude in type of bronchodilators available to the prescribing physician nearly equals the list of currently available FDA approved bronchodilators.

Summary

Recent literature abounds with data which supports the need to give greater consideration to the metered dose inhaler as a therapeutically effective and more cost effective method of in-hospital aerosolized bronchodilator delivery.[10-12] Patients are increasingly asked to assume a larger role in their own care following discharge, making opportunities such as in-hospital self-administered aerosol therapy too important of a tool to pass up.

Hospitals are under increasing pressure to provide a greater range of health care services with existing resources. Existing procedures such as medicated aerosol therapy which can be provided as effectively but more efficiently in an alternative fashion while increasing patient involvement in their own care can simply no longer be overlooked.

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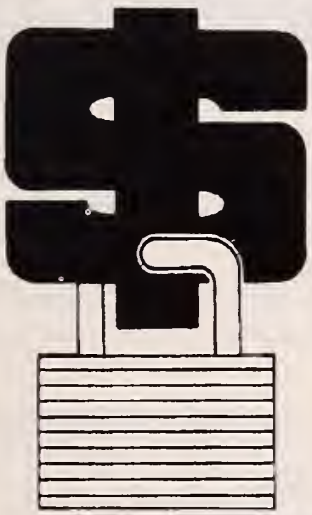
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The Shortage of Nursing Personnel

IOWA IS NOT IMMUNE FROM the nationwide nursing shortage. The ultimate potential impact of the nursing shortage will be inadequate health care for Iowans.

Recognizing how the nursing shortage can adversely impact Iowans, the Iowa Legislature charged the Iowa Department of Public Health, in conjunction with the Board of Nursing, with examining the nursing personnel needs of rural and urban areas and recommending measures to ensure an adequate nursing supply, especially to underserved areas. The Task Force on the Shortage of Nursing Personnel was established to examine needs and to make recommendations. These recommendations were reported to the Iowa Legislature in January, 1989.

The Task Force examined nursing personnel needs as reported in literature. The *Statewide Plan for Nursing, 1988* (published by the Iowa Board of Nursing) identified several reasons for the nursing shortage: the decline in nursing as a career choice, the increasing number of women choosing careers that have been male dominated, and men not choosing traditionally female dominated occupations. The plan also addressed the drop in college enrollment due to the decline in the number of high school graduates.

Factors Influencing the Nursing Shortage

A plethora of information exists in the literature regarding other factors influencing the nursing shortage. Based on a review of these studies and reports, the Task Force made recommendations on the following issues:

- **Financial rewards:** Nursing salaries (entry level and long term earning potential) and benefits must be competitive with other career opportunities available to men and women.
- **Staffing:** Staffing patterns should reflect the need to deliver effective and quality patient care in a changing health care environment.
- **Work environment:** Improvements in the work environment will help assure an adequate supply of nurses in the future.
- **Administration:** Nurse executives and administrators should collaborate in the planning for delivery of patient care.
- **Nurse/physician relationships:** Nurses and physicians should collaborate in the delivery of patient care.
- **Image:** Promote a positive image of nursing and nursing services.
- **Education:** Improve access to nursing education by expanding locations, offering variable course scheduling and attracting a diverse student population.
- **Financial assistance:** Provide adequate and equitable funding for nursing education.

The strategies developed and the lead agencies identified by the Task Force flow from these 8 issues. The Task Force concludes that to improve the supply of nurses in Iowa, the strategies developed should be implemented by nurse educators, nurse executives, physicians, practicing nurses, administrators and government agencies.

For more information or for a copy of the report, contact the Iowa Board of Nursing at 515/281-3256.

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

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Physicians' Desk Reference on CD-ROM has been priced with widespread distribution in mind. The 1988 disc is available for $395. Beginning in 1989, a subscription to 3 updated discs per year will cost $595. Updates will be issued in January, May and September. There will be no update in 1988. *Physicians' Desk Reference on CD-ROM* is available directly from the publisher, Medical Economics Company, 680 Kinderkamack Road, Oradell, New Jersey 07649, 1/800/526-4870 or through leading medical book distributors. Prepayment is required. Refunds are available during a 30-day preview period.

CANCER REPORT — *The popular notion that the United States is suffering from a pollution-induced cancer epidemic is false, according to the report* Cancer in the United States: Is There an Epidemic?, *published by the American Council on Science and Health (ACSH), an independent scientific organization. The best evidence indicates that only a very small proportion of cancers — perhaps 2% of the total — are attributable to industrial pollution. Cultural and personal habits, such as tobacco use, sexual practices and sunbathing, contribute more to cancer causation than environmental pollution or toxic chemicals. To obtain a copy of* Cancer in the United States: Is There an Epidemic? *send a self-addressed, stamped ($.66 postage), business-size (#10) envelope to U.S. Cancer Report, ACSH, 47 Maple Street, Summit, New Jersey 07091.*

FDA APPROVES SIEMENS LITHOSTAR FOR KIDNEY STONE TREATMENT — The U.S. Food and Drug Administration has approved use of Lithostar, a new device that uses sound shock waves (much like a home stereo speaker) to disintegrate painful kidney stones in a therapeutic procedure known as lithotripsy. It is manufactured by Siemens Medical Systems, Inc., Iselin, New Jersey. The previous generation machine, called a "water bath lithotripter," had several shortcomings including the need for general anesthesia, immersion in a water bath and an overnight stay in the hospital. The new Siemens Lithostar system requires little to no anesthesia and procedures are typically performed on an outpatient basis.

LACTAID® STARTER KITS FOR LACTOSE INTOLERANCE AVAILABLE TO PHYSICIANS — *Lactaid Inc., the worldwide leader in the field of marketing lactase enzymes and lactose-reduced foods, announced that their Patient Starter Kits are now available to all physicians. These Patient Starter Kits, which have proven very popular with the gastroenterologists, include a booklet on lactose intolerance and samples of Lactaid® Tablets and Lactase Drops. With this kit any lactose intolerant patient can begin to enjoy any milk or dairy food without gastric distress. To order free Patient Starter Kits for their office or clinic, physicians may call toll-free, 1/800/257-8650. Patients may also use the same toll-free number to reach the Lactaid Hotline for tips on how to treat milk and enjoy all dairy foods without gastric symptoms.*

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About Iowa Physicians

Dr. Callistus Stark, Cedar Rapids, has retired after 59 years of family practice. **Dr. Randy Bremner** has joined **Dr. Robert Bremner** at Medical Associates in Waterloo. Dr. Bremner received the M.D. degree from the U. of I. College of Medicine and completed his residency at Grand Rapids, Michigan. **Dr. Maria Mitchell** has joined the Des Moines Medical Group. Dr. Mitchell received the M.D. degree from Kosice Medical School, Kosice, Czechoslovakia and completed a residency at St. Joseph Mercy Hospital, Mason City. **Dr. Alan Patterson** has joined the staff of the Clarke Medical Clinic in Osceola. Dr. Patterson previously practiced family medicine in Knoxville and Des Moines. **Dr. Daniel Larose** has joined **Dr. Ronald K. Miller** at Miller Orthopaedic Affiliates. Dr. Larose received the M.D. degree at Montreal University, Montreal, Canada. **Dr. Todd T. Langager** has been elected to fellowship in the American College of Cardiology. Dr. Langager is associated with Medical Associates of Cedar Rapids.

Deaths

Dr. David C. Carver, 76, longtime Rockwell City family practitioner, died October 25 at Trinity Regional Hospital, Fort Dodge. Dr. Carver received the M.D. degree from the

(Continued next page)

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U. of I. College of Medicine and served his internship at Methodist Hospital in Madison, Wisconsin. He practiced medicine in Rockwell City for 42 years, retiring in 1981. Dr. Carver was a member of the North American Academy of Manipulative Medicine and a life member of the Iowa Medical Society.

Dr. Robert M. Wray, 79, Cedar Rapids, died November 5 at St. Luke's Hospital, Cedar Rapids. Dr. Wray received the M.D. degree at the U. of I. College of Medicine where he also served an internship and residency. He began private practice in 1939, served as chief of orthopedics at the 147th General Hospital in Honolulu, Hawaii, then resumed his Cedar Rapids practice in 1946, retiring in 1976. Dr. Wray was a member of the American Academy of Orthopedic Surgery and a life member of the Iowa Medical Society.

Dr. Placidus J. Leinfelder, 83, Iowa City, died November 9. Dr. Leinfelder received the M.D. degree from the University of Wisconsin Medical School, Madison, Wisconsin and completed his residency at the U. of I. College of Medicine. He was a professor in the Department of Ophthalmology, College of Medicine and assistant chief of the Eye Clinic at University Hospitals for 34 years. Dr. Leinfelder was a life member of the American Ophthalmology Society and the Iowa Medical Society.

Dr. Robert F. Deranleau, 68, Perry, died November 24 at his home. Dr. Deranleau received the M.D. degree from the University of Minnesota Medical School in Minneapolis, Minnesota. He practiced medicine in Perry for 34 years, retiring in 1986. Dr. Deranleau was a member of the Iowa Division of the American Cancer Society's board of directors.

Dr. George J. McMillan, 75, Fort Dodge, died October 22 at his home. Dr. McMillan received the M.D. degree from the State University of New York Downstate College of Medicine, Brooklyn, New York and served a residency at Buffalo General Hospital, Buffalo, New York. He was in general practice in Fort Madison for 24 years and chief of staff at the Veterans Administration Regional Hospital in Buffalo, New York for 7 years until retirement in 1981.

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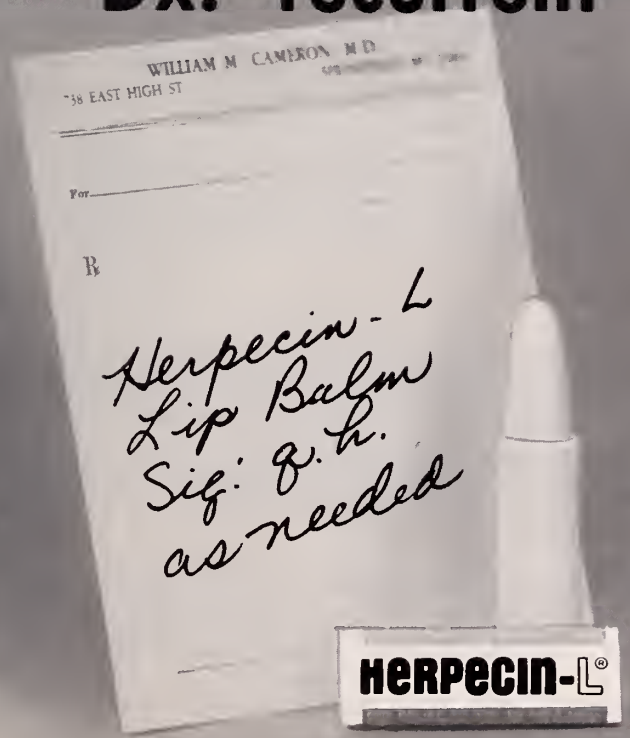
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MANKATO CLINIC, LTD — is seeking BE/BC physician in the following specialties: allergy, dermatology, invasive cardiology, oncology, urology, ophthalmology and general internal medicine. The Mankato Clinic is a 38-doctor multi-specialty group practice in south central Minnesota with a trade area population of 150,000. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Roger Greenwald, Administrator or Dr. B.C. McGregor at 507/625-1811 or write 501 Holly Lane, Mankato, Minnesota 56001.

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An Important Alliance

IN THESE DAYS OF SOPHISTICATED medical technologies and treatments, effective communication between doctors and nurses is an increasingly significant component of quality health care. Helping to foster this communication is the IMS MD/RN Liaison Committee.

At a January joint meeting of the committee and representatives of the Iowa Nurses Association and Iowa Board of Nursing, Colleen Goode, R.N., clinical director of nursing at University of Iowa Hospitals and Clinics, quoted a 1986 study of intensive care outcomes in major medical centers.

"Our results support the belief that involvement and interaction of critical care personnel can directly influence outcome from intensive care. In comparing the outcomes in 5,030 patients from 13 hospitals, we found important differences between predicted and observed death rates for all patients and differences within specific diagnostic categories. These differences appear to relate to the interaction and communication between physicians and nurses."

In the November, 1986 issue of *IOWA MEDICINE,* Kay Myers, R.N., M.S., then executive director of the Iowa Nurses Association, wrote "A patient's life may depend on the communication between physicians and nurses. This communication fosters trust, thus improving the quality of health care."

The purpose of the MD/RN Liaison Committee is to meet with representatives of organized nursing, discuss issues of concern at a formal level and foster understanding between doctors and nurses.

Through this committee, Iowa physicians have the opportunity to discuss issues such as the recent revision of the Nurse Practice Act. Nursing representatives from the Iowa Nurses Association (INA) and the Iowa Board of Nursing have also been invited to meet with the official policy-making bodies of the Society.

The committee is not afraid to tackle the toughest and most potentially divisive issues. In recent years, these have included third party reimbursement for nurses, prescribing by nurses and, during the past few months, the AMA's controversial RCT proposal. Although there may not be universal agreement regarding IMS, INA and Board of Nursing positions on various issues, it is constructive for the groups to consider them together.

Through the committee, Iowa physicians have supported Iowa nurses in several worthy undertakings. The IMS made a contribution to help underwrite the cost of developing a Statewide Plan for Nursing. When the Iowa Nurses Association set up camps for kids to promote healthy lifestyles, the IMS endorsed the project and designated a physician representative to serve on the advisory committee.

In the final analysis, Iowa's patients stand to benefit from open lines of communication between physicians and nurses. Iowa physicians have long realized how important it is for this mutual understanding to extend to the bedside. In an editorial written in 1976 for *IOWA MEDICINE,* Scientific Editor Marion Alberts, M.D., said it well: "I wonder if physicians realize the emotional impact upon the nurse who must live with and share the grief of a family whose loved one is hooked to all that machinery? Does the nurse realize the pain in a physician's heart when there is nothing more to be done for a dying child? The nurse needs you, doctor; you need the nurse; the patient needs both of you."

February, 1989

Iowa Medicine

VASOTEC®

(ENALAPRIL MALEATE | MSD)

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but disconfinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to toferate such adjustments. (See PRECAUTIONS, *Drug Interactions* and AOVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranutocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Oosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See OOSAGE ANO ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In cfinical trials in heart failure, hyperkalemia was observed *in* 3.8% of patients, but was not a cause for discon*tin*uation.

Risk factors for the development of hyperkalemia include renal *in*sufficiency, diabetes mellitus, *and* the concomitant use of potassium-spari*n*g diuretics, potassium supplements, *and*/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or *dur*ing anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and OOSAGE AND AOMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt subsfitutes may lead to significant increases in serum potassium. Theretore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy — Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSO) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalaprif maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298 / patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4 3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2 2%), syncope (2 2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Oepression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia

Urogenital: Renal failure, oliguria, renal dystunction (see PRECAUTIONS and DOSAGE AND AOMINISTRATION), prostate hypertrophy

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity

Dther: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in bfood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed *in* about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation *in* 1 2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Dther (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of fiver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose *in* patients not on diuretics is 5 mg once a day. Oosage should be adjusted according to bfood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Oosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See OOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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IowaMedicine

March 1989

Journal of the Iowa Medical Society









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- *Physician/Pharmacy Relations*

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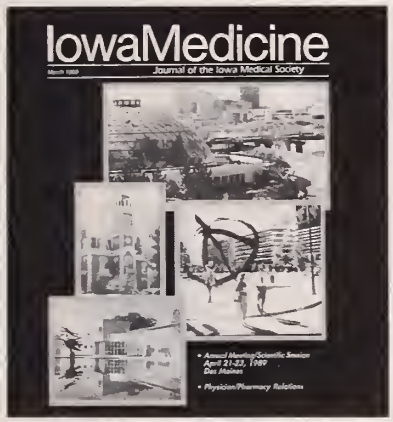
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About the Cover

This month's cover shows scenes of Des Moines, site of the 1989 Scientific Session/Annual Meeting April 21-23. Shown are (clockwise, from top) the Des Moines skyline viewed from the Botanical Center, downtown's Nollen Plaza and the "Crusoe Umbrella," the Des Moines Art Center and the Governor's Mansion, Terrace Hill. Included in this issue is the Scientific Session program. (Photos for our cover were provided courtesy of the Des Moines Convention and Visitors Bureau.)

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Daniel M. Youngblade, M.D.

President's Privilege



Insuring the Best Care

PHYSICIANS AND PHARMACISTS have established a tradition of working well together. For many years, these 2 great professions have enjoyed open lines of communication which ultimately benefit our patients.

However, even among the best of friends, potentially-divisive issues sometimes arise. Therapeutic substitution is one of those issues of concern to physicians.

We in the medical profession feel very strongly that properly diagnosing illness and prescribing appropriate medications require careful medical examinations by well-trained and licensed physicians. No other health care provider is capable of diagnosing general medical conditions in order to recommend treatment by prescribing medication.

The Iowa Medical Society continues to be concerned over attempts to pass legislation to allow establishment of a pharmaceutical protocol which permits pharmacists to make therapeutic substitutions without approval by the physician.

Therapeutic substitution is a practice by pharmacists of substituting a different drug, with the same general therapeutic affect, as the drug originally prescribed by the physician. In the absence of a full medical history, physical and diagnosis, the pharmacist cannot be sure whether or not the substitution of a different drug is appropriate for a particular patient. Substitution without approval by the prescribing physician may seriously compromise quality of care due to different side effects and unintended results.

The Iowa Medical Society believes therapeutic substitution should occur only in the hospital setting, under carefully controlled conditions, with the joint involvement of a medical staff and hospital pharmacy deciding which drugs should be considered for substitution. Physicians should approve every substitution in order to assure proper care.

Representatives of the medical and pharmaceutical professions have discussed the issue of therapeutic substitution and will continue to do so. I am confident the concerns of both professions can and will be addressed.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

Pharmacy/Medicine Interface

THOMAS R. TEMPLE, R.Ph., M.S.
Des Moines, Iowa

The author discusses current issues facing pharmacy and stresses the benefits of ongoing cooperation between pharmacists and physicians.

THE RELATIONSHIP BETWEEN PHARMACY and medicine reads like a weather report . . . stormy and windy with considerable fog and occasional periods of sunshine. Also like the weather, physician-pharmacist relations seems to be one of those issues both professions are content to talk about but rarely do anything about.

That must change! Emerging today are issues and challenges that are beginning to profoundly effect both professions. Until recently, each profession viewed these issues as profession specific, unilateral problems. They are not. Just as these challenges cut across our professions, their successful resolution demands a collaborative response. For this reason, I was delighted to receive *IOWA MEDICINE'S* invitation to serve as guest author for this issue.

This article addresses issues and concerns facing the profession of pharmacy. I hope their articulation here will enhance physician awareness and heighten interprofessional cooperation. In reading this article, you may notice pharmacy's challenges are not vastly different from medicine's. For certain, we are both caught up in a major revolution which will cause signficant changes in the way health care is delivered and financed. In some ways this period of readjustment has served to divide us. In other ways there exist opportunities for close collaboration and joint effort.

A Profession in Transition

Since the early 1960's, pharmacy has been undergoing a dramatic transformation in its central function in society. That transformation is represented by a shift from product orientation to patient orientation. No longer is the focus on product formulation (ie: compounding) and drug product distribution. Instead, pharmacy's principle activity is clinical, emphasizing the provision of therapeutic drug information relevant to specific patients but separate and distinct from drug products themselves. In short, pharmacy views its current and future function as advancing rational drug therapy — therapy that is safe, effective and cost effective.

The pharmacy profession has extensively documented the value of clinical pharmacy services, especially in the institutional setting. Services such as drug use review, drug information, drug therapy monitoring and pharmacokinetic consultation have all been shown, in the scientific literature, to help hold the line on hospital costs and enhance the quality of patient care. Now that ambulatory care has a greater level of importance in health care delivery, we are finding the same principles which worked for the inpatient setting will work on an outpatient basis.

Mr. Temple is executive vice president of the Iowa Pharmacists Association.

Thomas Temple



True cost savings and enhanced quality of care — measured in terms of improved patient outcomes, better compliance and reduced incidence of adverse drug reactions — can be achieved if pharmacy's contemporary clinical skills can be better utilized, in cooperation with the physician, to serve patients.

Pharmaceutical education has played a dominant role in pharmacy's transformation to a clinical based profession. Many schools of pharmacy have already moved to an all Pharm.D. (Doctor of Pharmacy) degree curriculum. Many others have developed sophisticated post graduate programs offering advanced clinical training and clerkship/residency components.

This expanded level of education has been designed not to create a competitor for traditional physician functions but to position the pharmacist to be a more useful partner with the physician in delivery of quality and cost effective drug therapy. This partnership will, in my opinion, become even more crucial as technologies associated with modern-day drug therapy grow increasingly more complex.

Issues and Challenges

Most issues and challenges confronting pharmacy stem, in large part, from the corporatization of health care. As stiff winds of competition and entrepreneurship swirl through the health care economy, pharmacists, like other health professionals, find themselves seeking methods for ensuring their continued survival and viability. Whether we like it or not, economics has become a driving force in health care today. Big buyers of that care — government, corporations and unions — have begun flexing their muscles in an effort to restructure our delivery system. It is the challenges emerging from this revolution that pharmacy is now spending the bulk of its time addressing.

Third Party Influence

The proliferation of HMOs, PPOs and other systems of managed health care represent a significant challenge for practicing pharmacists. The shift from fee-for-service to risk sharing, capitation based reimbursement is creating significant economic problems for pharmacists, many of whom are ill-equipped from a business perspective to deal with this new dimension in financing.

Many of the third party entities, driven by economic minded businessmen, have sought to contain pharmaceutical costs through programs of restricted patient access, coverage exclusions, mail order drug schemes and other policy restrictions. In many cases pharmacists have found themselves virtually locked-out of third party programs, unable to serve patients with whom they have developed positive relationships.

However, pharmacists are proving their resiliency. By joining together in group purchasing programs and third party contracting networks, they are finding ways to compete in this era of competition. Nevertheless, the third party arena represents a major challenge area for the practicing pharmacist.

Increased Government Involvement

A second area of concern is the increased involvement of government in pharmaceutical care. Like medicine, pharmacy has continually addressed challenges brought on by a growing Medicaid program. For over 2 decades pharmacy has confronted issues such as reduced reimbursement, limited formulary systems, costly administrative processing systems and policies which restrict the exercise of professional judgement.

Now sitting on pharmacy's horizon is the Medicare program which, in 1991, will begin coverage of outpatient prescription

(Continued next page)

drugs. With an anticipated 700 million claims running through this health care system, pharmacy is eyeballing even greater government intervention into pharmaceutical care. Obviously, this will greatly affect the practice of medicine.

Interprofessional Issues

In the area of interprofessional relations, 3 issues continue to gnaw at both the pharmacy and medical professions — pharmacist prescribing, therapeutic interchange and physician sale of drugs.

In my opinion, the first 2 issues — pharmacist prescribing and therapeutic interchange — have generated senseless controversy, fueled mostly by misunderstanding and injudicious use of terminology. Do pharmacists really desire the autonomy to prescribe complex drug therapies and substitute one drug for another, independent of physician knowledge? Absolutely not! Instead, pharmacists merely wish to use their education and knowledge, working with physicians and patients to select the most appropriate and cost effective drug therapy.

These are not new roles for pharmacists but their expansion in recent years has surfaced because society in general is demanding pharmacy and medicine interrelate more to ensure the provision of quality pharmaceutical care at the most reasonable cost.

In regard to physician sale of drugs, pharmacy is naturally concerned because this system of drug distribution precludes the pharmacist from the pharmaceutical care equation. Pharmacy realizes the recent surge in physician dispensing is stimulated by the proliferation of entrepreneurial drug repackagers looking to make a quick dollar by setting doctors up in drug dispensing businesses.

Just as quality prescribing encompasses much more than issuing a prescription, drug dispensing involves much more than counting tablets or capsules. The dispensing process involves planning, organizing, controlling and monitoring a comprehensive, safe and error free drug inventory and distribution system.

Dispensing synthesizes a combination of professional knowledge, judgement skills and functions which assures patients get the right medication for the right condition, at the right time, in the right dose and in the right dosage form, with due consideration for cost. Further and equally important, quality dispensing assures patients understand the nature of drug therapy including therapeutic objectives, beneficial effects, potential side effects, dosing instructions and storage requirements.

Certainly, most physicians would agree dispensing is too complex and important to be circumvented by a group of repackagers attempting to lure physicians into a profit making scheme. Accordingly, pharmacy will continue to support a drug distribution system which emphasizes pharmacist-physician cooperation and an appropriate system of checks and balances.

Technology

Pharmacy is preparing for the new age of drug therapy brought on by modern day technology. This new group of drugs, arising from our understanding of prostaglandins, hormones, monoclonal antibodies immunomodulators and neurotransmitters, will give rise to important new therapies. Additionally, new drug delivery systems or dosage forms such as implantable sustained release polymers are being developed. Specialized carrier molecules and liposomes will carry drug agents to their site of action before releasing and activating them.

Many of these new drugs and dosage forms will replace traditional drug therapy. In response, pharmacy education is beginning to position the pharmacist to play an important role with the physician in the application of this new mode of therapy.

Conclusion

It is impossible to touch on every issue and challenge confronting pharmacy. Certainly other issues are on the profession's agenda for the balance of this decade, including the use of technical personnel in pharmacy, specialization, malpractice, an expanded home health care market and pharmaceutical services for the elderly.

Health care is changing and practice roles for health care professionals are blurring. Nevertheless, pharmacy remains committed to the principles of quality patient care and close interprofessional cooperation with the medical community.

1 9 8 9



CEDAR RAPIDS HEART SYMPOSIUM

FOR THE PRACTICING PRIMARY CARE PHYSICIAN

APRIL 22, 1989
STOUFFER FIVE SEASONS HOTEL
CEDAR RAPIDS, IOWA

KEYNOTE SPEAKERS

Richard N. Fogoros, M.D.
Director, Clinical Electrophysiology
Allegheny General Hospital
Pittsburgh, PA

J.H.Ehrenhaft, M.D.
Professor Emeritus
Division, Cardiothoracic Surgery
University of Iowa, Hospitals and Clinics

DINNER SPEAKER

Jim Walden
Head Football Coach
Iowa State University

Spouses program available-see registration on back

Cedar Rapids Heart Symposium for the Practicing Primary Care Physician • April 22, 1989

Course Objectives and Intended Audience

This course is designed to provide family practitioners, internists and other primary care physicians with practical approaches to common cardiovascular disorders. The course will emphasize diagnostic evaluation, treatment modalities and day to day management of these disorders from the perspective of the primary care physician. Specific topics will include updates on: management of stable and unstable angina, new approaches to the treatment of acute myocardial infarction (including thrombolytic therapy), evaluation and treatment of patients with congestive heart failure, risk factor modification for coronary artery disease, indications for pacemaker implantation and follow up, approach to the patient with sudden cardiac death, evaluation and therapy of common cardiac arrhythmias, new aspects of hypertensive therapy, and evaluation of the patient with syncope. Surgical topics will include indications for and post-operative management of patients undergoing coronary artery bypass and valve procedures. Discussion will also cover surgical management of recurrent ventricular tachycardia including implantation of the automatic implantable cardioverter defibrillator.

Accreditation and CME Credit

As an organization accredited by the Iowa Medical Society for continuing education, the Cedar Rapids Medical Education Program certifies that this continuing medical education offering meets the criteria for 7 Credit Hours in Category 1, provided it is used and completed as designated.

Exhibitors

Pharmaceutical manufacturers will have representatives available to answer questions and distribute information.

Program Co-Directors

A. Ersin Atay, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

Todd T. Langager, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

James M. Levett, M.D., F.A.C.S.
Staff Cardiothoracic Surgeon
St. Luke's Hospital/Mercy Medical Center
Clinical Associate Professor
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University of Iowa Hospitals and Clinics

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Lawrence J. Cook, M.D., F.A.C.C.
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St. Luke's Hospital/
Mercy Medical Center

David A. Rater, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
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William G. Meffert, M.D., F.A.C.S.
Staff Cardiothoracic Surgeon
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Mercy Medical Center

Wilson W. Strong, Jr., M.D., F.A.C.S.
Staff Cardiothoracic Surgeon
St. Luke's Hospital/
Mercy Medical Center

M. Naser Payvandi, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

James E. Tatkon-Coker, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

Guest Faculty

Richard N. Fogoros, M.D.
Director, Clinical Electrophysiology
Allegheny General Hospital
Pittsburgh, PA

J.H. Ehrenhaft, M.D
Professor Emeritus
Division of Cardiothoracic Surgery
University of Iowa Hospitals and Clinics

After Dinner Speaker

Jim Walden
Head Football Coach
Iowa State University

Registration

The deadline for course registration is April 10, 1989. Registration is limited.

The registration fee covers course materials, continental breakfast, lunch, refreshments and dinner.

There is no additional charge for a spouse to attend any of the social functions.

Cancellation Policy

A full refund of registration is available if the cancellation notice is received in writing by April 10, 1989. After that time no refund will be given.

Accommodations

The Stouffer Five Seasons Hotel has set aside a block of rooms at a preferred rate for the symposium attendees.

Reservations should be made directly with the Stouffer Five Seasons Hotel by calling (319)363-8161. To assure group rate, please identify yourself as a Cedar Rapids Heart Symposium participant.

Transportation

The Cedar Rapids airport is only a 15 minute drive from the Five Seasons. There are regular flights scheduled throughout the day.

After arriving in Cedar Rapids, car rental is available from several national firms.

Taxi service from the airport is available at all times.

Stouffer Five Seasons Hotel has complimentary transportation between the hotel and airport. This transportation runs approximately every half hour and a direct line to Stouffer's is available at the airport terminal.

Events

Early Registration with hospitality suite will be available Friday, April 21 from 6:00 p.m. to 9:00 p.m.

Continental Breakfast with morning registration will be Saturday, April 22 from 7:00 a.m. to 7:45 a.m.

Lunch will be provided for program participants at Stouffer from 12:00 Noon to 1:00 p.m.

Spouse's Program will be available. This will include a luncheon at the Roosevelt Hotel with a style show by Armstrong's Department Store. Door prizes will be given away during this function.

Evening Events include a social hour from 6:00 p.m. to 7:00 p.m., dinner at Stouffer beginning at 7:00 p.m., and an after-dinner talk by Jim Walden, Head Football Coach, Iowa State University.

For further information contact Roman Frigge, Symposium Coordinator at **(319) 369-7434**.

This symposium is sponsored in part by St. Luke's Hospital and Mercy Medical Center of Cedar Rapids.

REGISTRATION FORM

Cedar Rapids Heart Symposium
For the Practicing Primary Care Physician
April 22, 1989

First Name MI Last Name

Address

City State Zip Code Phone

❑ My spouse will be attending the spouses program.
❑ My spouse will be attending the evening events.

Registration Fee - $75.00

Make check payable to: Cedar Rapids Heart Symposium

Course materials, all events and meals for participants and spouses are included in the fee. ***Please include a check with your registration form and mail to:***

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Registration No.

Physician Assistant Supervisor Regulations

MICHAEL J. HUCKABEE, PA-C
Iowa City, Iowa

The author reviews Iowa's requirements for physicians supervising physician assistants.

IOWA PHYSICIANS AND PHYSICIAN ASSISTANTS (PAs) have enjoyed an admirable relationship since the first PA was employed at University of Iowa Hospitals and Clinics in 1970. Iowa is highly regarded for its development of the physician/PA team and the state maintains 2 reputable PA training programs.

There are approximately 200 PAs in Iowa, each with at least one alternate supervising physician. It may be modestly estimated one of every 10 Iowa physicians has direct or secondary supervision of a PA. Utilization of PAs by Iowa physicians has made a positive contribution to health care, as measured by recent studies in patient and physician satisfaction and the tremendous increase in PA job opportunities in the state.[1,2] PA employment listings have more than doubled since 1985, with 41 PA job opportunities in Iowa in 1987.[3]

Mr. Huckabee is assistant director and adjunct assistant in teaching with the University of Iowa's Physician Assistant Program.

A vital component in the growth of physician/PA teams in Iowa has been regulations governing this team. Iowa's legislation and regulations have served as models for other states and continues to provide a strong framework for the physician and PA. Though the governing bodies have been modified by the creation of a board of physician assistant examiners, the rules and regulations are unchanged. This paper addresses salient features of these regulations to clarify the picture of the ideal practice and perhaps avoid the pitfalls of shortcuts in proper PA supervision.

Supervision registration: Physicians who supervise a PA should be sure they are registered to do so jointly by the State Board of Physician Assistant Examiners (SBPAE) and the State Board of Medical Examiners (SBME). Alternate supervising physicians may change and it is not uncommon to forget to receive SBME/SBPAE approval. Deletions or additions to this registry currently require no fee and should be routinely undertaken.

Task delineation: The application for a physician/PA practice identifies tasks the PA is approved to perform and the degree of supervision the tasks require of the physician. Initial applications usually contain more commonly accepted clinical duties. After some time working together, the physician will often grant more responsibility to the PA in certain areas or will train the PA in defined procedures. Approval to supervise the PA in these areas is required by the SBPAE which then notifies the SBME.

(Continued next page)

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

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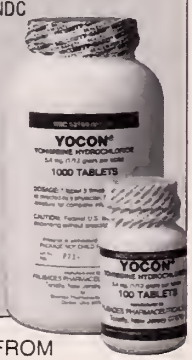
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Again, this process is free and should be carried out to maintain the integrity of physician/PA team.

Presigned prescriptions: No one, including a PA, should receive a presigned prescription blank. Attempts to justify this action with protocols for PAs to write for previously agreed upon drugs and situations is not acceptable. There is an inherent risk of presigned prescriptions being mislaid or stolen.

Medical records review: Chart review is a fundamental method of supervising and evaluating PA performance. State regulations require all patient care provided by the PA should be reviewed weekly if the care is rendered without direct consultation. Also, all notes made by the PA should be countersigned by the physician in a timely manner. It is critical the physician/PA team regularly communicate with each other about the patient's care and this procedure reinforces this communication.

PA identification: State law requires the PA be clearly identified as such by wearing a name tag specifying "physician assistant." There is the potential for patients or others to confuse a PA with a physician. Though this may seem trivial, a name tag may avoid a misunderstanding with more involved ramifications.

PA continuing education: One standard for maintaining the PA's professional competency is the requirement of continuing medical education (CME). National recertification for PAs and state law require CME. PAs are to report 100 hours of CME every 2 years; 40 hours should be Category I activities. Supervising physicians will reap the benefits of this requirement in improved patient care and should support the PA's participation in CME.

Good communication between the physician and the PA can usually ensure these measures are met. In addition to satisfying Department of Health's directives, meeting these regulations will maintain the high quality of health care for which physician/PA teams in Iowa are recognized.

References

1. Oliver, DR, *et al:* Patients' satisfaction with physician assistant services. *Physician Assistant* 1986;10;7:51-60.
2. Oliver, DR, *et al:* Physician satisfaction with physician assistant services. Unpublished data Univ. of Iowa, 1986.
3. Physician assistant employment opportunities, Univ. of Iowa, 1988.

John McGee, M.D.

Questions and Answers



Physician/Pharmacist Relations

The author, who practices obstetrics and gynecology in Burlington, is chairman of the IMS Committee on Interprofessional Relations. He discusses key aspects of the physician/pharmacist relationship.

What is the role of the hospital pharmacist regarding physicians' orders?

I would hope the hospital pharmacist would be an active member of a pharmacy and therapeutic committee of the hospital staff.

Within that framework, the pharmacist would be in an excellent position to help clarify, if necessary, and carry out the physician's orders. The hospital can save thousands of dollars in developing a formulary that would have the best choices of effective drugs.

What are the ramifications of therapeutic substitution outside the hospital setting?

Therapeutic substitution outside the hospital setting usually implies generic substitution. An inpatient study by Bloom showed the consumer cannot be guaranteed the lowest cost simply by buying generic drugs. (*JAMA*, 1986, Vol. 256, pgs. 2523-30.) Lasagna, in an editorial comment on Bloom's study, highlighted "the foolishness of the blind faith in the money saving power of generic prescribing." (*JAMA*, 1986, Vol. 256, pg. 2566.)

The other problem is that generic hormones, for example, are not therapeutically equivalent to brand name products. The American College of Obstetrics and Gynecology (ACOG) was alarmed that many pharmacists and physicians were not aware of this lack of equivalence and sent out a bulletin to all members pointing out the problem.

To what extent should physicians rely on pharmacists for the latest information on drugs?

Physicians obtain the latest information on drugs from a variety of sources including journals, scientific meetings, seminars, "detail" representatives from the larger drug companies and pharmacists. Most physicians have a good working relationship with their local pharmacists. The doctor knows which pharmacist has the best information about drugs and will utilize that knowledge as required.

What do you believe is the state of the relationship between pharmacists and physicians on a professional, one-on-one level? On an association level?

The one-on-one relationship between pharmacists and physicians has been excellent in our area. I have practiced medicine in Iowa for 28 years and I believe the pharmacists to

(Continued next page)

be very helpful in providing good pharmaceutical services for my patients. The willingness on the part of the pharmacist to adopt good pharmaceutical practices such as use of computer technology is encouraging.

On an association level, there is indication of aggressively pursuing a larger share of the health care dollar by changing the pharmacy act on therapeutic substitution. The IMS and the AMA have resisted these efforts.

There were good discussions between the Iowa Pharmacists Association and members of the IMS to consider these issues in 1986 and 1987, particularly in regard to therapeutic substitution and physician dispensing.

Letter to the Editor

Dear Editor:

I read the current issue (December, 1988) of *IOWA MEDICINE* with interest and the following thought came to me about retirement.

It is my judgment that for a physician to properly adapt to the changing patterns of life brought on by retirement he must first, from very early on, have healthy attitudes on life, work and living. One axiom which will assist in this is: "Work to live and do not live to work." — *Paul M. Kersten, M.D. (ret.) 965 Dartmoor Circle, Nokomis, Florida 34275.*

Looking for Volunteers

The Christian Appalachian Project (CAP) is looking for volunteers with a healthcare background. A non-profit, nonsectarian organization that serves the poor people of Appalachia, CAP is seeking health professionals — from recent nursing school graduates to retired doctors — interested in sharing their skills with a needy and deserving community.

Founded in 1963, in one of the most beautiful but most impoverished parts of Appalachia, CAP now runs 75 self-help programs ranging from spouse-abuse shelters and emergency assistance to "infant universities" and homes for handicapped children. A 1986 University of Kentucky report found the ratio of licensed physicians to population in Appalachian Kentucky is 1/2000. The shortage of other healthcare personnel is equally serious.

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For more information, write Christian Appalachian Project Volunteer Office, 235 Lexington Street, Lancaster, Kentucky 40446.

LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

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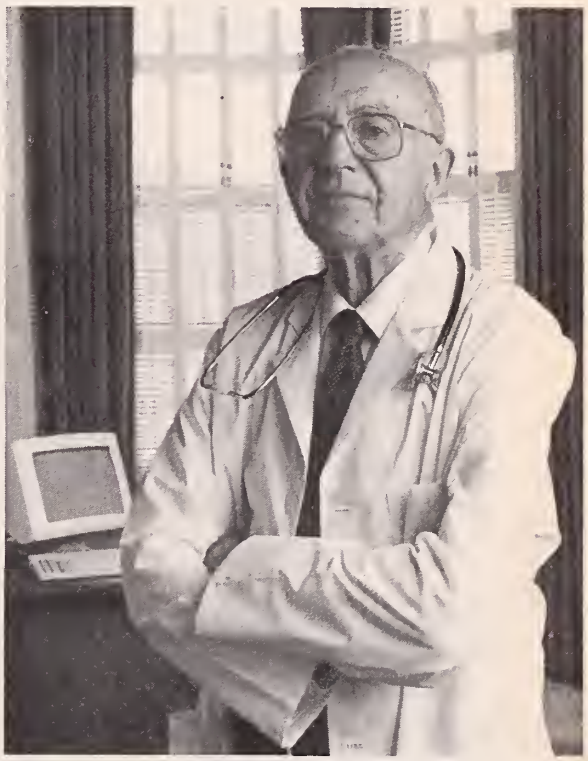
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MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

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APRIL 12, 1989

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"AORTIC AND MITRAL VALVULOPLASTY: REGISTRY RESULTS"

"UPDATE ON LASERS"

"INTERVENTIONAL ALTERNATIVES IN MYOCARDIAL INFARCTION: RECENT CLINICAL TRIALS"

"THROMBOLYTIC THERAPY OF ACUTE ISCHEMIC SYNDROMES: UPDATE AND PERSPECTIVES"

"PERIPHERAL ANGIOPLASTY: A MERCY UPDATE"
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Post Polio Syndrome: A Common Condition in Need of Recognition

ERICH W. STREIB, M.D.
Cedar Rapids, Iowa

The author discusses post polio syndrome, a "new" illness suffered by many survivors of the polio epidemics in the 1940s and 1950s.

ACUTE POLIOMYELITIS, once a threatening illness, has become virtually extinct in the western hemisphere with the development of an effective vaccine. However, there are an estimated 300-500,000 survivors of the polio epidemics of the 40s and 50s in the U.S.[7,9,14,24] Many have developed new problems 30 to 40 years after the acute disease.

Symptoms and signs of this "new" illness range from excessive fatigue, joint pain and muscle aching to progressive muscle atrophy and weakness. The complex is called post polio syndrome (PPS). However, if progressive atrophy and weakness predominate, the symptom is referred to as post polio muscular atrophy (PPMA).[7,9,14]

Despite recent interest in the PPS, accurate knowledge of a pathogenic mechanism and a rational treatment program for these patients is lacking. This paper presents an overview based on current, available literature and personal experience.

Case Material

The analysis includes 16 patients referred for evaluation of possible PPS. All had a detailed neurologic examination, electromyelographic studies and physical therapy evaluation. Major demographic data of the patients are listed in Table 1. Table 2 lists the final diagnosis in these 16 patients. Three case histories are included to illustrate particular aspects of the problem.

Case 1

This 43-year-old man presented with a 6-month history of progressive leg weakness, wasting of the left calf muscles and a continuous aching discomfort in his leg muscles. There were no other neurologic complaints.

In 1953, at the age of 10, he suffered from poliomyelitis. Although he was not hospitalized at that time, he had difficulty swallowing and he was unable to walk. He was able to

Dr. Streib is a neurologist with Internists, P.C. in Cedar Rapids.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF MARCH 1989

TABLE 1

Age	Sex	Age of Polio	Affected Part	Present Complaint	EMG	Final Diagnosis Cause of Symptoms
37	F	2	Right leg	Right leg weakness	Severely abnormal	PPMA
(1)				Ankle pain	right leg	Traumatic arthritis
41	F	2	Quadriplegia	Excessive fatigue	Normal	Obesity
(2)			no respirator	Joint pain		Sleep apnea
37	M	2	Quadriparesis	Progressive leg	Polyneuropathy	PPS and Hereditary Motor Sensory
(3)				weakness	Previous polio	Polyneuropathy
39	M	4	Paraplegia	Severe fatigue	Abnormal legs	PPS
(4)				Leg weakness		Anxiety
36	F	1	Quadriplegia	Chronic back pain	Abnormal	PPS with chronic lumbosacral radiculopathy
(5)			no respirator			
42	M	4	Right-sided	Tremor and weakness,	Abnormal right side	Parkinson's disease
(6)			weakness	left side		
43	M	10	Quadriparesis	Left leg wasting and	Abnormal legs	PPMA
(7)				weakness		
37	F	2	Quadriparesis	Fatigue tiredness	Normal	Anxiety neurosis
(8)						
33	M	4	Right-sided	Back pain, right	Abnormal	PPS
(9)				shoulder pain		
50	F	10	Paraplegia	Back pain, hand	Abnormal	PPS (chronic back)
(10)				numbness and arm pain		Bilateral CTS
44	M	5	Quadriplegia	Exercise induced leg	Abnormal	PPMA
(11)				weakness		
57	F	15	Paraplegia	Progressive leg	Abnormal	PPMA versus cauda equina syndrome
(12)				weakness		
58	F	24	Paraplegia	Progressive leg	Abnormal	PPS overuse
(13)				weakness		
58	F	20	Arm weakness	Neck, arm weakness	Normal	Cervical strain unrelated to polio
(14)				Pain		
40	F	3	Paraparesis	Progressive arm pain	Abnormal	PPS overuse
(15)				and weakness		Myofasciitis
57	F	26	Paraplegia left	Hand numbness	Abnormal	Previous polio
(16)			arm	Bilateral arm pain		Severe bilateral CTS

walk a year later without crutches or braces. He never participated in varsity sports but played 18 holes of golf regularly until the onset of these current symptoms. His general health was good although he had gained 18 pounds during the preceding year.

General physical examination was normal. There was atrophy of the left calf (30.5 cm as compared to 34 cm on the right side) and mild atrophy of the left thigh. Biceps, triceps, knee and ankle jerks were present but the left ankle jerk was depressed compared to the right. Plantar responses were downgoing. Sensation and lumbosacral spine function were normal. A CT and MR scan of the lumbosacral spine were normal. Somatosensory evoked responses and peroneal and posterior tibial nerve stimulation and nerve conduction studies were within normal limits. Needle electrode examination (EMG) revealed a moderate amount of persistent fibrillation potentials and fasciculation potentials in various leg muscles. These changes were associated with severe loss of motor unit potentials (MUP). The MUP's were generally large although a few were small and polyphasic.

Comment

This man had generalized poliomyelitis at the age of 10 with good recovery. He led an active social and physical life until age 43. Evaluation at this time indicated subacute progressive leg muscle atrophy with EMG evidence of ongoing motor nerve fiber degeneration. A cauda equina syndrome due to nerve root or spinal cord compression was excluded by clinical, electrophysiological and radiographic studies.

TABLE 2

FINAL DIAGNOSIS RESPONSIBLE FOR PATIENT'S MAJOR COMPLAINT AND DISABILITY
(n = 16)

1. PPS "Nonspecific"	4
2. PPS Related conditions:	
Carpal tunnel syndrome	2
Lumbosacral radiculopathy	1
3. PPMA	4
4. Parkinson's disease	1
5. Hereditary motor — sensory — polyneuropathy	1
6. Patients with no EMG evidence of previous polio	3

Diagnosis of PPMA was made. Treatment included a reduction in the amount of walking and standing by this patient, coupled with an active "cardiovascular" exercise program using his arms predominantly. Weight reduction was also stressed.

Case 2

A 57-year-old woman complained of intermittent hand numbness associated with severe aching of the forearms and arms at night. This pain was particularly severe after a day's work as a secretary.

She had polio at age 26 with severe involvement of the legs. She used crutches for many years, but now used a manual wheelchair which she propelled with her strong arms.

Examination revealed severe bilateral leg atrophy and weakness with absent tendon reflexes. Muscle bulk and strength were good in the upper extremities. Both dorsiflexion and palmar flexion of the wrist produced a numbness and tingling in the median nerve distribution. There was a positive Tinel's sign when percussing the median nerve at the wrist bilaterally.

EMG revealed signs of previous poliomyelitis which were severe in the legs and mild in the arms. In addition, there was severe bilateral carpal tunnel syndrome.

Comment

Bilateral carpal tunnel release resulted in resolution of her current major problem. The carpal tunnel syndromes were probably related to her initial use of crutches followed by the propelling of her manual wheelchair. This demonstrates a "secondary" condition.[9]

Case 3

This 42-year-old right-handed accountant experienced progressive left arm and left leg weakness as well as a left hand tremor of 8 months duration. He had poliomyelitis at age 4 with resultant shortening and atrophy of his right leg. He wore a short leg brace. He had never considered himself disabled until his new symptoms appeared.

Examination revealed masked facies, decreased spontaneous movements of the left arm and leg, mild left-sided rigidity and action tremor of both hand and leg. The right leg was atrophic.

EMG revealed evidence of previous polio in the muscles of the right and left leg. Left arm muscles were normal. Laboratory studies including copper metabolism were normal. MR scan of the head was normal.

Comment

A diagnosis of Parkinson's disease was made. Although this patient had some residual from poliomyelitis, his current symptoms and neurological signs were not related.

Pathophysiological Considerations

Poliomyelitis is an acute viral illness. Only 1 or 2% of humans affected by the polio virus, however, develop a paralytic illness. In at least 90% of affected persons the disease is inapparent. Originally believed to be a childhood disease, the age of onset of poliomyelitis steadily increased in the western hemisphere in this present century. It was quickly recognized the disease was more severe in adults.[23] The introduction of the tank respirator enabled severely affected patients to survive despite considerable residuals.

Using monkeys, Bodian demonstrated most motor nerve cells in the spinal cord and brain stem are infected with the virus during the acute phases of the illness.[4] Many neurons die. These neuronal changes were observed in severely affected animals and in those animals with relatively minor weakness and complete clinical recovery.

Improved muscle strength during recovery from poliomyelitis occurs in one of 2 ways.

- Some of the nerve cells may functionally recover.
- Through collateral reinnervation; via this

(Continued next page)

means, surviving intact nerve cells send collateral sprouts from their distant intact axons to the "orphaned muscle fibers" which they would otherwise not innervate.

By this mechanism, a motor nerve cell can increase its territory 3-4 times.[24] Thus, a motor nerve cell of the lumbar cord which initially innervated 500 muscle fibers of the calf muscle via collateral reinnervation may supply 2000 muscle fibers. This 4-fold increase in muscle fibers increases the metabolic demands on these motor neurons tremendously. The probability a recovered nerve cell may be more vulnerable to injury due to this increased metabolic demand is one possible cause of late development of progressive weakness.[6,14,24]

This collateral reinnervation and subsequent change in the size of the motor unit is of paramount diagnostic importance since it results in rather dramatic electromyographic changes. These EMG changes have been found in all muscles of all polio patients with signs of wasting and weakness; even more important is that these EMG changes are also present to a lesser degree in muscles with full clinical recovery.[3,6-9,19,24]

Thus, an electromyelographic examination not only determines whether or not a patient was previously affected with poliomyelitis but quantitates the severity of the disease. Normal EMG findings in muscles of a symptomatic limb absolutely exclude PPS as an etiologic factor. Although it was initially believed the EMG also allows one to distinguish between chronic poliomyelitis and PPMA, this has been recently questioned.[3,6]

Post Polio Syndrome

Isolated cases of patients who suffered from acute polio as children and later developed progressive muscular atrophy have been known for over 100 years.[1,5,12,13,16,20,25] This delayed or late progressive muscular atrophy has been compared to amyotrophic lateral sclerosis (ALS) by some authors. The possible relationship between the previous poliomyelitis and the later development of ALS stimulated many of the recent large studies of polio survivors.[1,6,7,9,12,14,20,22,25]

Halstead et al sent questionnaires to a large number of patients with previous polio and prospective studies were done by some centers.[7,9,14,19] Their results and our own experiences are similar. Not surprisingly, these patients complain about a variety of new symptoms in addition to progressive weakness and atrophy. The most common current problems were fatigue, joint and muscle pain and weakness in previously affected and unaffected muscles. In some patients, this necessitated renewed bracing or return to a wheelchair. Difficulty with sleep and deterioration of respiratory function were other common complaints.[11,15,18] Dalakas and associates classify patients with post polio syndrome in the following clinical categories:[9]

- Patients with simple deterioration of function associated with joint pain but with subsequent apparent stabilization of muscle function.
- Patients with compressive neuropathies such as carpal tunnel syndrome, ulnar nerve neuropathy or brachial plexus neuropathy secondary to chronic use of crutches and/or wheelchairs.
- Patients with cervical or lumbar radiculopathy on the basis of spinal deformities.
- New, slowly progressive, predominantly focal muscle weakness in 1 or 2 limbs.

Loss of muscle strength was variable and slow in all the studies.[5,6,9,14,19] None of these patients developed generalized muscle weakness or wasting or pyramidal tract signs, features required for a diagnosis of ALS. Factors at the onset of polio which were most strongly associated with delayed symptoms included the need for hospitalization, onset after the age of 10 years, quadriplegia or ventilator assistance.[14] These criteria obviously imply greater severity of the initial acute illness.

Management of Post Polio Syndrome

Management of patients with post polio sequela begins with a complete evaluation by the physician to exclude other causes for their symptoms, e.g. anemia, hypertension, thyroid disease, etc. A detailed neurological assessment is required to determine whether or not the new problems are related to previous polio or an unrelated neurologic disorder. Treatable conditions in patients with poliomyelitis include obesity, progression of orthopedic abnormalities, myofascitis or fibrositis syndromes. EMG's should be done on all patients to exclude the possibility of an entrapment neuropathy or radiculopathy as cause of the new symptoms. The EMG will accu-

rately reflect the severity of the initial insult to the motor nerve cells.

A normal EMG excludes poliomyelitis as an etiologic factor; severe EMG changes may indicate the presence of old disease as well as ongoing muscle fiber degeneration in patients with late renewed progressive weakness.

Utilization of an exercise or strengthening program has been the source of some controversy. Bennet has stated it is possible to overuse a partially denervated muscle to such an extent that longstanding muscle impairment results.[2,17] Many of our patients and those quoted in the literature have had similar experiences.[7,14,19] We suggest that, if by clinical and EMG examination, the cause of muscle weakness is secondary to disuse atrophy, the usual strengthening exercises should be employed without regard to fatigue.[10]

If the weakness is due to late progression of polio, the muscles or limbs in question should be used less through appropriate bracing or the use of a wheelchair or be subject to a slow and judicious strengthening exercise program. This exercise must be nonfatiguing.[10] Because load changes must be made very slowly to avoid fatigue or muscle pain, much time is required before any positive changes may be seen. A nonfatiguing exercise program is frustrating to the patient and therapist.

Any improvement in general conditioning and cardiac endurance will reduce symptoms of fatigue and pain in all patients. We recommend these patients undergo a supervised graded exercise program adapted to the individual's physical limitations.[21] Thus, with severe leg weakness, an arm ergometer could be used; with predominant upper extremity disability, a bicycle ergometer. Manual wheelchair ambulation could be part of an exercise program to increase upper extremity strength and cardiovascular fitness.

Although it is anticipated post polio syndrome will become extinct, affected persons deserve understanding, guidance and evaluation by physicians and health care personnel.

References

References noted in this article are available from the author or the editors of *IOWA MEDICINE.*



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ENDOCRINE SURGERY

Friday, May 5, 1989

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Des Moines, Iowa

GUEST FACULTY

Robert J. Corry, M.D.
Professor & Head of Dept. of Surgery
University of Iowa
Iowa City, Iowa

Orlo H. Clark, M.D.
Professor of Surgery
University of California
San Francisco, California

Clive S. Grant, M.D.
Associate Professor of Surgery
Mayo Clinic
Rochester, Minnesota

Nelson Gurll, M.D.
Professor of Surgery
University of Iowa
Iowa City, Iowa

Edwin L. Kaplan, M.D.
Professor of Surgery
University of Chicago
Chicago, Illinois

Norman W. Thompson, M.D.
Henry King Ransom Professor
Chief, Division of Endocrine Surgery
University of Michigan
Ann Arbor, Michigan

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"Evaluation and Treatment of Thyroid Nodules and Thyroid Cancer"

"Re-operative Parathyroid Surgery"

"Surgical Treatment of Papillary Thyroid Cancer"

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"Benign Thyroid Diseases"

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Marion E. Alberts, M.D.

The Editor Comments



Pharmacy and Medicine

THE PHARMACISTS OF ANCIENT EGYPT were meticulous and tenacious. Their spirit of investigative research would seem like madness by today's standards. They investigated all parts of plants, tapped metallic and mineral sources and any part of any animal was considered of possible medicinal use. The pharmacist was concerned not only with medicinals but with fragrances and cosmetics. Occasionally their medicinal concoctions served the patient well; but most were inactive substances based on superstition.

Some of their concoctions were not too far removed from pharmaceuticals of today. Many of their prescriptions were concocted with yeasts and molds. Were the patients of antiquity receiving a crude form of penicillin? Such has been the history of pharmacy.

This issue of *IOWA MEDICINE* is dedicated to our pharmacist friends. Physicians depend on the skills of the pharmacist to dispense the medicinals we prescribe. In hospitals we depend on pharmacists to prepare intravenous solutions. The pharmacist can be a valuable help-mate in our concerns regarding compatabilities of various drugs, possible harmful incompatabilities of several preparations as well as concerns that one preparation may be more efficacious than another.

Sometimes concern arises regarding the separate responsibilities of physicians vs pharmacists and dispensing of drugs. Physicians may resent pharmacists dispensing medical advice along with fulfillment of a prescription. On the other hand, the pharmacist may take offense that in some areas physicians dispense drugs.

These are "turf" battles in some instances, but it would seem cooperation between the professions can solve these problems. It is becoming more commonplace for pharmacies to record drugs dispensed to a given patient. Such a service is invaluable to detect possible incompatabilities or overdosage of a given drug. Patients sometimes seek advice from several physicians and could possibly get a repetition of another prescription. Usually patients patronize their favorite pharmacy; thus the pharmacist with the aid of a computer can detect such problems and call them to the attention of the physician.

There are many small towns which can support a physician but not a pharmacy. For the convenience of the patient it is nearly mandatory for the physician to dispense medicinals. In a larger town this need not be the case. Yet, the wholesale pharmaceutical industry continues to woo physicians to dispense their products with the lure of increased revenue.

Putting aside these points of contention, we of *IOWA MEDICINE* salute the pharmacists and the pharmaceutical industry. Like separate drugs given for the good of the patient, our professions can be compatible and beneficial for the most important reason — the patient. — *M.E.A.*

Richard M. Caplan, M.D.

CME Notebook



Knowing and Knowing Not

A SPEAKER I recently heard commented regarding continuing medical education, "There has been an alarming increase in the number of things I know nothing about." The comment "hit me where I live." Possibly you sometimes feel that way, too. But that sense of ignorance — call it a "knowledge gap" if that feels better — is what fuels the engine of motivation to learn something new. The Greek stoic Epictetus said, "It is impossible for anyone to begin to learn what he thinks he already knows."

That aphorism recalls the well known 4-part adage that begins, "He who knows and knows that he knows. . . ." You know the rest of it, so I'll simply invite you to pause to discover if its 4 sections indeed include the situation described by Epictetus. For me his person is not encompassed among those traditional 4 categories, although perhaps a case could be made to consider him a subdivision of "knows not and knows not that he knows not."

These categories usually are taken to refer to information already known (by somebody). How goes it when one considers innovation, true creativity? One response to this question is that credited to Goethe: "Everything has been thought of before. . . . The task is to think of it again." This comment has an intriguing attractiveness to it, and may be shown to be correct for many instances. Seldom would I challenge the intellectual power of Goethe, but I think his statement partially incorrect, although a true proof that a "new" idea has never been thought of before obviously cannot be accomplished.

I cannot believe there is not a true first time for a thought or idea, just as some acts (first stepping on the moon) or products (the Mona Lisa, chocolate chips) were at some point really new. William Harvey is given credit for conceiving the circulation of the blood by describing the heart in 1628 as functioning "like a pump." The notion is viewed as a tremendous advance, yet some might ask how it had not been advanced long before. The answer surely lies partly in the fact that only about then did the invention of a mechanical pump come into technical and general vocabulary and awareness. Also, since Harvey did not know of capillaries, he truly couldn't explain the complete mechanism that his logic and ingenious demonstrations insisted upon.

Thinking gives rise to thought (a tautology, of course) but these thoughts can "combine," or associate to produce what must be new constructs or abstractions. They may even be fruitful in practical ways. They can certainly be fun to experience, even though such combinations are also the weird or frightening sensations we call nightmares. The trick is to remember the useful new juxtapositions of thought, and just repress the nightmares. Good luck!

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.









1989
Scientific Session

April 21, 22, 23
Hotel Savery
Des Moines, Iowa

SCIENTIFIC SESSION

The 1989 Scientific Session of the Iowa Medical Society will be held in conjunction with the Annual Meeting of the IMS House of Delegates April 21, 22 and 23 at the Savery Hotel in Des Moines. There will be a full day of scientific programming on Friday, April 21 beginning at 8:50 a.m. and concluding at 4:30 p.m. A 2-hour risk management session is scheduled from 3 p.m.-5 p.m. Saturday, following the opening session of the House and reference committee hearings. On Sunday, the Scientific Session will conclude with a special panel discussion on "Ethical Issues in Obstetrics and Pediatrics". Following a brief recess, the final session of the House of Delegates will convene at 10 a.m.

The program is designed specifically to enhance the physician's medical knowledge and professional competence. The meeting is open to all IMS members and their guests.

PRESIDENT'S GREETING

Attendance at IMS Scientific Sessions and Annual Meetings provides opportunities for physicians to discuss important medical- socioeconomic issues and to see old friends and make new ones.

The Program Committee has designed an excellent series of presentations that should be of value and interest to physicians in all specialities. Speakers from Iowa and several other states will be on hand to make formal presentations and to respond to questions and comments from physicians in attendance.

I take this opportunity to express my gratitude to all members of the IMS for their cooperation, assistance and support during the past year. Serving as IMS president has been a very rewarding and enjoyable experience for me.

Daniel Youngblade, M.D.
President, Iowa Medical Society

HOTEL RESERVATIONS

The Savery Hotel, 4th and Locust, Des Moines, is headquarters for the Scientific Session and Annual Meeting. All sessions will be held on the Mezzanine Level. Room reservations may be made by writing directly to the Hotel or calling the reservation desk (515/ 244-2151). Please ask that rooms be taken from the block reserved by the IMS. A special rate has been arranged for physicians attending the sessions.

PROGRAM COMMITTEE

Donald Lulu, M.D. (chairman), Des Moines; Charles Jons, M.D., Ames; Gerald McGowan, M.D., Sioux City; Wayne Rouse, M.D., Boone; and Paul Seebohm, M.D., Iowa City.



DR. LULU



DR. JONS



DR. MCGOWAN



DR. ROUSE



DR. SEEBOHM

PROGRAM

FRIDAY, APRIL 21
SAVERY HOTEL

8:00 A.M. - **REGISTRATION/ INFORMATION**
EARLY BIRD CONTINENTAL BREAKFAST

GENERAL SESSION

8:50 A.M. - **WELCOMING REMARKS**

Daniel Youngblade, M.D.
Sioux City
President, Iowa Medical Society



DR. YOUNGBLADE

9:00 A.M. - **TRANSFUSION TRANSMITTED DISEASES**

Ronald Strauss, M.D.
Professor
Department of Pathology and Pediatrics
College of Medicine
University of Iowa
Iowa City, Iowa
Medical Director,
DeGowin Blood Center
U of I Hospitals/Clinics



DR. STRAUSS



DR. GROVER-MCCAY

9:30 A.M. - **POSITRON EMISSION TOMOGRAPHY (PET)**
(*Erskine Memorial Lecture*)

Nancy Andreason, M.D.
Professor
Department of Psychiatry
College of Medicine
University of Iowa
Iowa City, Iowa

Maleah Grover-McKay, M.D.
Assistant Professor
Departments of Internal Medicine and Radiology
College of Medicine
University of Iowa
Iowa City, Iowa

Peter Kirchner, M.D.
Professor
Department of Radiology
College of Medicine
University of Iowa
Iowa City, Iowa

Q AND A SESSION

11:15 A.M. - **RECESS**

11:30 A.M. - **GERIATRIC PSYCHIATRY**

James Davis, M.D.
Associate Professor of
Psychiatry
College of Medicine
University of Nebraska
Omaha, Nebraska



DR. GRAHAM

12:00 NOON - **RECESS**

12:15 P.M. - **LUNCHEON PROGRAM**

IMPACT OF GOVERNMENTAL REGULATIONS ON MEDICAL PRACTICE
(*Annual Family Practice Lecture/ Waterloo Medical Society Memorial*)

Robert Graham, M.D.
Executive Vice President
American Academy of
Family Physicians
Kansas City, Missouri



DR. SHEEHAN



DR. BEAHRS

1:15 P.M. - **PANIC SYNDROME**

David Sheehan, M.D.
Professor of Psychiatry
University of South Florida
College of Medicine
Tampa, Florida

2:30 P.M. - **RECESS**

3:00 P.M. - **PERSPECTIVES: RESOURCE BASED RELATIVE VALUE STUDIES**

(*Baldridge-Beye Memorial Lecture/Iowa Medical Foundation*)

1989 IMS ANNUAL BANQUET
SATURDAY, APRIL 22, 7:00 P.M.

- Presentation of Awards
- Special Guests including nationally known writer and researcher Darold Treffert, M.D.

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An Overview of a Cost-Based Fee Schedule
Glenn Hammons, M.D.
Deputy Director
Physician Payment
Review Commission
Washington, D.C.
Responses:
Oliver Beahrs, M.D.
Emeritus Staff
Mayo Foundation
President, American
College of Surgeons
Rochester, Minnesota

Alan Nelson, M.D.
President-Elect,
American Medical
Association
Salt Lake City, Utah



DR. NELSON

SATURDAY, APRIL 22
SAVERY HOTEL

7:30 A.M. - **EARLY BIRD CONTINENTAL BREAKFAST**
(Courtesy of Blue Cross/ Blue Shield)

8:30 A.M. - **OPENING SESSION, HOUSE OF DELEGATES**

1:30 P.M. - **REFERENCE COMMITTEE HEARINGS**

3:00 P.M. - **RISK MANAGEMENT**
A 2-hour session on risk management will be arranged by the Iowa Physicians Mutual Insurance Trust (IPMIT). Two hours of credit toward the IPMIT requirement of 4 hours education in risk management will be awarded to IPMIT insureds.

5:00 P.M. - **ADJOURNMENT**

6:00 P.M. - **PRESIDENT'S RECEPTION**
(Hosted by the University of Iowa College of Medicine and Foundation)

7:00 P.M. - **ANNUAL BANQUET GUEST SPEAKER - Darold Treffert, M.D.**
Fond du Lac, Wisconsin



DR. TREFFERT

SUNDAY, APRIL 23
SAVERY HOTEL

7:30 A.M. - **EARLY BIRD CONTINENTAL BREAKFAST**
(Courtesy of Blue Cross/ Blue Shield)



DR. NIEBYL



DR. WEIR

8:00 A.M. - **ETHICAL ISSUES IN OBSTETRICS AND PEDIATRICS**

Jennifer Niebyl, M.D.
Professor and Head
Department of Obstetrics and Gynecology
College of Medicine
University of Iowa
Iowa City, Iowa

Robert Weir, Ph.D.
Professor
Department of Pediatrics
Director, Program in Medical Ethics
College of Medicine
University of Iowa
Iowa City, Iowa

Moderator:
Paul Seebohm, M.D.
Consultant to the Dean
College of Medicine
University of Iowa
Iowa City, Iowa

9:30 A.M. - **ADJOURNMENT**

10:00 A.M. - **FINAL SESSION, HOUSE OF DELEGATES**

LUNCHEON

Robert Graham, M.D., Kansas City, executive vice president of the American Academy of Family Physicians, will be the luncheon speaker on Friday, beginning at 12:15 p.m. His topic will be "The Impact of Governmental Regulations on Medical Practice". It has been designated as the Family Practice Annual Lecture/Waterloo Medical Society Memorial.

Before assuming his duties with the AAFP in October, 1985, Dr. Graham had an extensive background in government service as administrator of the Health Resources and Services Administration of the Department of Health and Human Services, Assistant Surgeon General in the U.S. Public Health Service and staff member of Senator Edward Kennedy's U.S. Senate Subcommittee on Health Scientific Research. He also served as executive secretary of the Graduate Medical Education National Advisory Committee.

BANQUET

Darold Treffert, M.D. of Fond du Lac, Wisconsin, nationally known researcher and writer, will be a special guest at the IMS Annual Banquet Saturday evening, April 22 at 7 P.M. Dr. Treffert, a psychiatrist, has become well known across the country for his interest and writings in the area of the rights of the mentally ill and their families. His speaking and writing interests include prevention in the mental health area under the title of "Mellowing: An Alternative to Coping". He has appeared on many national news programs.

A President's Reception hosted by the University of Iowa College of Medicine and the University of Iowa Foundation will precede the banquet from 6-7 P.M.

AMA PRESIDENT-ELECT

Alan Nelson, M.D., of Salt Lake City, Utah, president-elect of the American Medical Association, will be a special guest at the meeting. He will take part in a panel discussion regarding the Resource-Based Relative Value Studies on Friday and will address the IMS House of Delegates on Sunday morning.

CME CREDIT

The 1989 Scientific Session of the Iowa Medical Society is jointly sponsored by the University of Iowa College of Medicine. The University of Iowa College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians, and designates this CME activity as meeting the criteria for 9 hours in Category 1 of the Physicians Recognition Award/American Medical Association. The program has also been approved for 9.75 hours of prescribed credits by the American Academy of Family Physicians.

Physicians insured by IPMIT will receive 2 hours credit toward IPMIT's educational requirement for attending Saturday afternoon's 2-hour Risk Management session.

ACKNOWLEDGMENTS

The physician members of the Iowa Medical Society give special thanks to the companies listed below for the educational grants provided to support the 1989 Scientific Session. Appreciation is also extended to Blue Shield for the coffee functions and to the University of Iowa Foundation and College of Medicine for hosting the President's Reception.

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1989 SCIENTIFIC SESSION REGISTRATION FORM

Please detach and return this form to IMS HEADQUARTERS

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On Saturday, April 22	_____	_____
On Sunday, April 23	_____	_____
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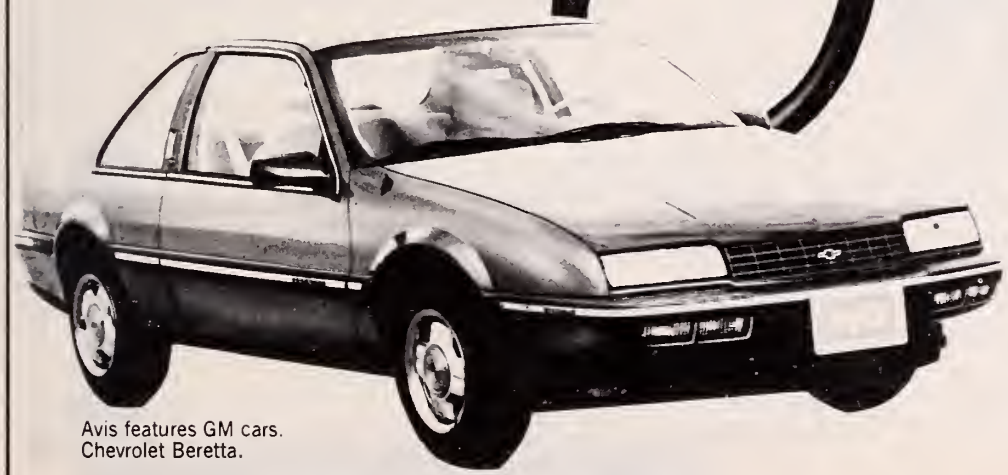
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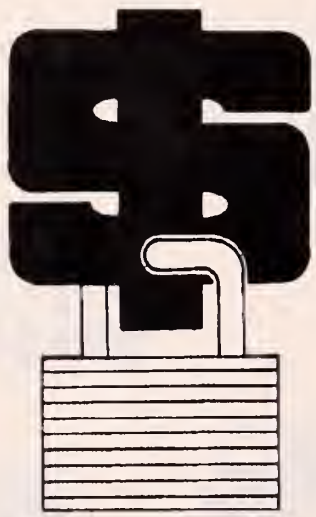
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Nursing Shortage: Focusing on Priorities

THE NURSING SHORTAGE is negatively impacting hospitals and other health care organizations. The shortage is sure to worsen.

Many solutions have been offered. Most remedies suggested address the symptom of the problem but do not necessarily identify the underlying problems. Hospitals and other health care organizations should do a check to rate the organization and identify problem areas

Checklist for Identifying Problems

The following checklist is suggested by Mary Mallison, editor, *American Journal of Nursing:*

- 20% of hospital based nurses leave their jobs early. What is your turnover? The average age for an RN in a hospital is 38 years. What is the average age of your nurses? Are you failing to retain nurses through their working years?
- The National Association for Health Care Recruitment estimates replacing RNs costs $1,300-$1,600. The American Hospital Association says costs are actually $10,000-$15,000 per turnover (including temporary staff, registry staff and a 6-week orientation program). Do you spend the same amount of money on retention as you do on recruitment?
- Do executives who supervise nurses attend board of trustees meetings?
- Quality of care improves when physician/nurse relationships are collaborative. What is the physician/nurse climate in your institution?
- Over 80% of hospitals had higher acuity levels in 1988 than in 1987. Have your staffing levels kept pace with your acuity ratings? Is your acuity rating system accurate?
- Only 15% of hospitals offer cafeteria benefits or flexible benefits. Does your hospital offer flexible benefits or services such as day care or sick care for employees' children?
- Nurses' incomes should double after about 10 years of experience and triple by retirement. What does your hospital do about wage compression?
- A hospital's reputation for nursing care influences a patient's choice of hospital and affects physician recruitment. What is your institution doing to promote a positive image in nursing?

Problem identification and priority setting within an organization are important factors which should be considered before an expensive recruiting and retention program is initiated.

Priority setting in the 1990s is the watchword for any organization. Often an organization will establish a strategic plan which sets the conceptual framework for the organization but does not address the operational issues of nursing as a separate entity. The climate is currently competitive and this competitiveness will heighten over the next 10 years. The organization which addresses these problems, prioritizes items and implements necessary programs within its structure will be the organization which will not only survive, but succeed.

This article was authored by Delores Moyer, RN, health care consultant and Bernie Hess, health care partner, both with McGladrey & Pullen, Des Moines.

Walter Bate, M.D.

PRO Update



Inappropriate Readmissions

(This is the third of 4 articles discussing Medicare PRO requirements. Walter Bate, M.D. is a Mason City internist specializing in hematology. Dr. Bate serves on the IFMC Board and the Comprehensive Review Committee.)

INAPPROPRIATE HOSPITAL READMISSIONS continue to generate a significant percentage of adverse review determinations. PROs issue admission denials and/or premature discharge determinations to make sure patients receive adequate care during or after each hospital stay.

In my experience as a reviewer, the most frequent premature discharge determinations are due to concomitant medical problems or laboratory abnormalities not directly related to the admission problem and overlooked upon discharge. A classic example is a patient admitted with pneumonia who, upon routine laboratory screening, is also diagnosed with anemia. The pneumonia clears and the patient goes home but the anemia has not been addressed. The patient is later readmitted with gastrointestinal bleeding and the physician is cited for premature discharge.

To avoid this situation, make a "problem list" for all patients. Upon discharge, the problem list is reviewed to ensure all conditions have been addressed. Make sure each lab slip has been initialed.

Inappropriate transfers are a common source of premature discharge decisions. For example, if the patient is receiving large dosages of medications, exhibits acute-level symptoms and/or requires daily physician intervention, he or she should not be transferred to the skilled level. This is true even in facilities with swing beds. We review many cases in which the patient was transferred too soon.

To minimize quality of care concerns that arise between hospitalizations, HCFA has instructed all PROs to review "intervening care," or specified care to patients who have been readmitted to an acute facility within 31 days of their first discharge. This review, which will begin on April 1, will pertain to services coverable by Medicare provided by a skilled nursing facility, hospital outpatient department or a home health agency. Care provided in a private physician's office will not be reviewed.

A sampling of intervening care records will be reviewed to ensure the care met professionally-recognized standards, services were provided in a timely manner, services were appropriate to the patient's needs and services were provided in an appropriate setting.

Many inappropriate readmissions (and hospital payment denials) are caused by an incorrect billing practice. HCFA regulations state care for one illness should generate one hospitalization. If a patient must leave the hospital for the weekend or for any other reason prior to planned surgery, use furlough or pass days rather than discharging the patient. Discharge and subsequent readmission may result in an adverse review determination.

The key to avoiding adverse review determinations is documentation. If your care plan makes good medical sense to you and does not conflict with HCFA regulations, it will probably make sense to a physician reviewer.

Eastern Iowa Center for
Cancer Detection, Treatment and Research

CANCER FORUM
FOR PHYSICIANS

Clinical Cancer Research Trials: Implications for the Primary Care Physician
Lloyd K. Everson, M.D.
Director, Indiana Regional Cancer Center
Indianapolis, IN

Clinical Indicators: A Project of the Association of Community Cancer Centers
Lee E. Mortenson, M.S., M.P.A.
Executive Director, Association of Community Cancer Centers
Rockville, MD

Adjuvant Treatment of Breast Cancer
James N. Ingle, M.D.
Medical Oncologist, Associate Professor of Oncology, Mayo Clinic
Rochester, MN

PDQ — A Medical Reference Data Base
Donald Nelson, M.D.
Assistant Director, Family Practice Residency Program
Cedar Rapids, Iowa

APRIL 28, 1989
9 AM-4 PM

Mercy Medical Center
Education Center
Cedar Rapids, Iowa

This program will consist of a review of several cancer treatment related topics relevant to primary care practice, providing you with the opportunity to update and supplement your knowledge in these areas.

As an organization accredited by the Iowa Medical Society for continuing medical education the Cedar Rapids Medical Education Program certifies that this continuing medical education offering meets the criteria for 5 credit hours.

The registration fee of $25.00 includes instruction, materials, continental breakfast and lunch. For registration information call 319-398-6719 or write the Eastern Iowa Center for Cancer Detection, Treatment and Research, 701 10th Street SE, Cedar Rapids, Iowa 52403.

Cancer Patterns of Northeast Iowa: Can We Improve Patient Care?
A. Curtis Hass, M.D.
Medical Director, Eastern Iowa Center for Cancer Detection, Treatment and Research and Hall Radiation Center
Cedar Rapids, Iowa

Pain and Symptom Management
David McFadden, M.S., R.Ph.
Oncology Clinical Pharmacy Specialist, University of Iowa Hospitals and Clinics
Iowa City, Iowa

Bone Marrow Transplant
Roger Gingrich, M.D., Ph.D.
Director, Adult Bone Marrow Transplant Program
Associate Professor, Department of Internal Medicine, University of Iowa
Iowa City, Iowa

Oncologic Emergencies
Dean H. Gesme, Jr., M.D.
Medical Oncologist, Assistant Medical Director, Eastern Iowa Center for Cancer Detection, Treatment and Research
Cedar Rapids, Iowa

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Summary.
Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae,* and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:
- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms
- Positive direct Coombs' tests have been reported during treatment with cephalosporins
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever). 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported
- Other: eosinophilia, 2%, genital pruritus or vaginitis, less than 1%, and, rarely, thrombocytopenia

Abnormalities in laboratory results of uncertain etiology
- Slight elevations in hepatic enzymes
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis, elevations in BUN or serum creatinine.
- Positive direct Coombs' test
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly).

I061088LI

Additional information available from Eli Lilly and Company, Indianapolis, Indiana 46285

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Board of Pharmacy Examiners: An Overview

THE IOWA BOARD OF PHARMACY EXAMINERS exists for 3 reasons:

- To establish educational requirements for the practice of pharmacy in Iowa and license pharmacists to engage in that practice.
- To regulate legal distribution of prescription drugs and devices through licensing of manufacturers, distributors, wholesalers and retailers of those drugs and devices.
- To regulate legal distribution of drugs classed as controlled substances through registration of hospitals, pharmacies, physicians, dentists, veterinarians, manufacturers, wholesalers and others who prescribe, administer, dispense or distribute those drugs.

The board currently has licensed or registered 3957 pharmacists, 940 pharmacies, 4913 physicians (MDs), 721 physicians (DOs), 1557 dentists, 155 hospitals, 795 veterinarians, 114 podiatrists, 179 optometrists, 315 wholesalers, 93 researchers, 18 analytical labs, 5 teaching institutions, 540 health care facilities, 5 manufacturers and 8 distributors.

Board office personnel includes 4 clerical staff, 6 investigators, a chief investigator and the director. Investigative staff conducts routine inspections of Iowa's licensed pharmacies, including hospital pharmacies. They also conduct controlled substances audits in offices of practitioners who dispense drugs as incident to their practice. Routine inspections of pharmacies also include controlled substances audits. These audits are an essential part of our ongoing effort to insure accountability for all controlled substances distributed at the retail level.

Pharmacy investigators also conduct follow-up investigations in response to complaints filed with the board office. These complaints generally come from consumers and involve allegations of medication errors by pharmacists. The board receives and acts on numerous requests to investigate reports on drug dependent persons and their efforts to obtain prescription drugs. These reports come from medical practitioners, pharmacists and law enforcement officials. In instances where the evidence points to clear criminal activity, reports are turned over to law enforcement officials. In other instances, the board notifies physician(s) involved so they can individually and/or collectively deal with the person. Currently, over 2500 persons are on the board's drug dependent list. That is a cummulative total for the last 10 years.

If investigations and audits show evidence of wrongdoing by pharmacists and pharmacies, those reports are referred to the board for final disciplinary action. Board action can involve anything from issuing an administrative warning to filing a complaint and statement of charges against the pharmacy or pharmacist. The board meets monthly to deal with issues relating to the practice of pharmacy and drug distribution. Administrative hearings are also held during those meetings. There are considerable increases in the number of complaints filed, disciplinary actions taken and administrative warnings issued. The chart on the following page compares fiscal years 1987-88 and 1988-89.

(Continued next page)

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

Activity	FY 87-88	FY 88-89†
Complaints & statements of charges issued	13	18
Administrative warnings issued	17	17
Administrative hearings held	4	9
Negotiated settlements	12	1
License surrenders accepted*	0	2
Informal conferences with licensees	7	0
Complaints received and investigated	63	53

* License surrenders are treated as a license revocation.
† Through Jan. 1, 1989.

Drug Diversion

The board continues to see escalation of prescription drug abuse problems on the part of the Iowa general public and Iowa health professionals. There is an increased number of "scams" aimed at physicians and pharmacies to divert narcotic and stimulant drugs from licit to illicit channels. Hydromorphone (Dilaudid) and Oxycodone (Percodan, Tylpx) remain high on the list of these scam operations. New to the scene within the past several years is the combination of Methylphenidate (Ritalin) and Pentazocine (Talwin).

The federal government and several states have stepped up efforts to incorporate multiple-copy prescription programs into efforts to increase control over drugs classed as controlled substances. While these initial efforts are aimed at Schedule II drugs, they probably will be expanded to cover additional schedules as evidence points to abuse and diversion of other drugs. An example of this is found in New York State where Benzodiazepines were added to their multiple-copy prescription program effective January 1, 1989.

The Iowa board is not enamored with such a program. The board shares the position of the AMA and the IMS in support of a less intrusive mechanism to deal with prescription drug diversion. The board believes efforts expended by the PADS (Prescription Abuse Data Synthesis) committee several years ago should be continued, along with the PADS II concept announced in 1988 by AMA. PADS II envisions a systemized collection and analyses of prescription drug supply and demand-site data.

There is no question the needed data on drug supply and drug demand exists. There is also no question about the need to examine fully that data to quantify the drug diversion problem. The board is entering into the first phase of a program called the Iowa Drug Abuse Monitoring System (IDAMS). When fully implemented, it is hoped IDAMS will allow collection and analysis of hospital emergency room drug admissions, crime lab reports, medical examiner drug overdose death reports, drug dependent persons who are doctor shopping and pharmacy shopping and drug purchasing/drug dispensing records in pharmacies. Using this data, the board should be able to quantify the drug diversion problem in Iowa. When that occurs, we can come to health professionals for counsel and guidance in addressing the issue.

Controversial Board Rule

A recent administrative rule of the board involving use of controlled substances in hospital emergency rooms has created controversy among Iowa phyicians, particularly those on the medical staff of smaller hospitals. The rule requires the physician to examine a patient in the emergency room if the hospital's controlled drugs are to be administered. The rule duplicates regulations of the federal Drug Enforcement Administration (DEA) and is based upon the fact that federal and state laws place restrictions on how controlled drugs are transferred from a practitioner to a patient. Those restrictions involve the use of 4 different modes whereby controlled substances can legally move between the physician and a patient.

One mode is a prescription. "Prescription" is defined in the act as "an order for medication which is dispensed to, and for, an ultimate user (patient)." A second mode is direct administration to, or ingestion by, the patient. A third mode is direct transfer by the physician to the patient for self-administration. The fourth mode is an internal hospital order.

Hospitals are classified under the Controlled Substances Act (CSA) as "institutional practitioners." Practitioners are authorized under the CSA to use controlled substances "in the usual course of professional practice and for a legitimate medical purpose." Taken together, these 3 provisions of the CSA authorize the physician to issue an internal hospital order for the immediate administration of a controlled substance to a hospital inpatient. That internal hospital order becomes the hospital's authority as an institutional practi-

tioner to administer a drug to the patient. That internal hospital order is not a prescription because it is not an "order for medication which is dispensed to, or for, an ultimate user."

Patients in the emergency room or outpatient department of a hospital are not "inpatients." Therefore, these drugs cannot be transferred to an ultimate user through the inpatient hospital order mode. This means the traditional way physicians order drugs for hospital patients does not apply to those seen in the emergency room or outpatient department of the hospital. The only other legal mode whereby controlled drugs can be transferred to the patient in the ER outpatient department is by direct administration to, or ingestion by, the patient.

Since the drugs are the hospital's, the hospital — as an institutional practitioner — must insure those drugs are issued "in the usual course of professional practice and for a legitimate medical purpose." In order for that to occur, the patient must be examined in the ER or outpatient department by a physician who can determine the medical needs of the patient and administer or order the administration of the drug.

For additional information about the Board of Pharmacy Examiners, contact Norman Johnson, Executive Secretary, at 515/281-5944.

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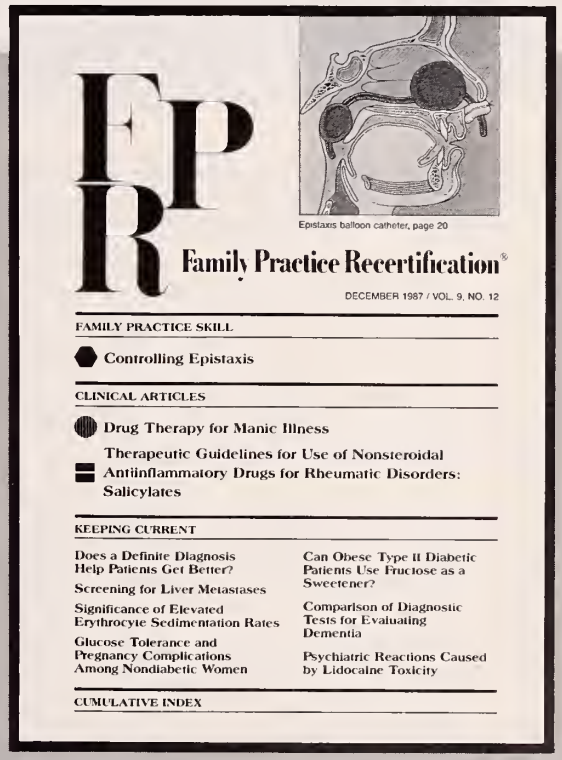
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U. of I. College of Medicine

GRANT NEWS . . . Thomas Brown and **Richard Brand, Orthopaedic Surgery,** will study whether prophylactic knee braces for football reduce ligament strain, with a $118,000, two-year grant from the National Institute of Arthritis and Musculoskeletal and Skin Diseases . . . **Jeffrey Murray, Pediatrics,** has received a $219,000 grant from the National Institute of Dental Research to seek the genetic cause of certain types of cleft lip and palate disorder . . . **Lynn Richman, Pediatrics,** and **Hughlett Morris, Otolaryngology,** will use a $175,000 grant from the National Institute of Dental Research to study how the speech and facial appearance of children with cleft lip and palate affects how they are perceived by others. . . . The role of the thymus gland in the work of the drug Cyclosporine is being explored by **Zuhair Ballas, Internal Medicine,** with a $149,000 grant from the National Institute of Allergy and Infectious Diseases.

A DRUG LONG USED TO TREAT THE SYMPTOMS OF HERPES simplex virus has been found to be safe and effective in keeping the disease under control for long periods of time. ***Jack Stapleton, Internal Medicine,*** *and researchers from institutions across the United States conducted a study, the first of its kind, on long-term suppressive therapy with acyclovir. They found that the toxicity of the drug is not cumulative and the benefits of suppression can last for at least one year.*

HIS RENOWNED WORK IN THE AREA OF FETAL alcohol syndrome has earned **James R. West, Anatomy,** one of the most distinguished awards in his field. West is the recipient of the Method to Extend Research in Time (MERIT) award from the National Institute on Alcohol Abuse and Alcoholism. The MERIT award will provide stable financial support for West's fetal alcohol syndrome research for 10 years with a total of $2 million. West and his colleagues are investigating the long-term effects of maternal alcohol consumption on offspring. They are also studying genetic differences to identify genetically determined characteristics that can influence the risk and severity of fetal alcohol effects on brain growth and structure and on behavior.

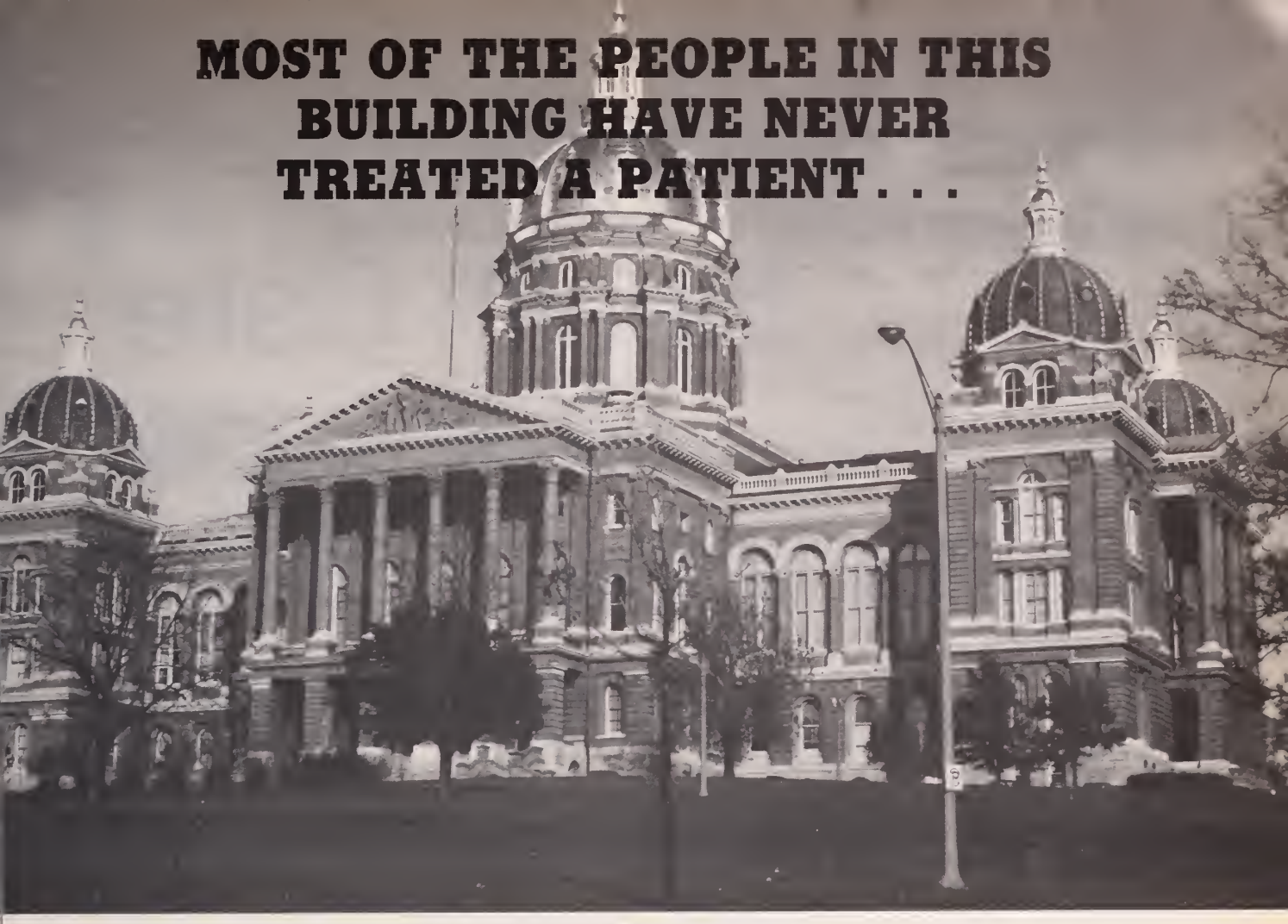
UI PHYSIOLOGY AND BIOPHYSICS RESEARCHERS have learned newfound properties of a calcium channel in muscle cells indicate the channel acts as a large pore, called a "gap junction" channel. The pore acts as a valve to regulate the amount of calcium released into muscle cells, says ***Kevin Campbell, Physiology and Biophysics.*** *Researchers now hope to learn how muscle cells use the electrical impulses they receive to regulate the release of calcium within the cell, Campbell adds.*

THE MIDWEST'S ONLY FORMAL TRAINING PROGRAM for cytogenetic technologists is being established at the UI to train new technologists to help meet the demand for diagnostic services. With a $491,000 grant from the U.S. Department of Health and Human Services Maternal and Child Health branch, **Shivanand Patil, Pediatrics,** will work to establish an intensive 9-month cytogenetics training program. With the growing demand for diagnostic services, it's estimated nearly 500 new technologists will be needed annually for the next 3 years, but currently, training programs produce fewer than 50 each year.

A GIFT OF $5 MILLION FROM THE ROY J. CARVER Charitable Trust to support medical research at the UI has been made through the UI Foundation. ***Dean John W. Eckstein*** *said the gift will be used by the college to provide "greatly increased research potential" in fundamental biomedical research, using the techniques of molecular biology and immunology. The gift will help the college recruit and support senior scientists and postdoctoral associates whose presence and leadership will "push the college to new levels of excellence in research in human biology," the Dean said.*

This material is furnished by The University of Iowa Health News Service.

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Contributions are not limited to the suggested amount. Neither the AMA nor the IMS will favor or disadvantage anyone based upon the amounts of or failure to make pac contributions. Contributions are subject to the limitations of FEC Regulations. (Federal Regulations require this notice.) Paid for by the Iowa Medical Political Action Committee, 1001 Grand Avenue, West Des Moines, IA 50265. Contributions to AMPAC and IMPAC are not deductible as charitable contributions for Federal Income Tax purposes. If your practice is incorporated, IMPAC and AMPAC voluntary political contributions should be written on a personal check.

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Medical News/Products and Programs

CRYPTO-LA® TEST, RAPID TEST FOR CRYPTOCOCCOSIS — The Crypto-LA® Test is a rapid latex agglutination slide test for the qualitative and quantitative determination of Cryptococcus neoformans antigen in serum and cerebrospinal fluid. Although extremely rare in the general population, cryptococcosis has been notably high among HIV-positive patients, being the fourth most common opportunistic infection in this group. The Crypto-LA® Test provides a convenient method which can be easily incorporated into HIV profiling where high risk populations are being tested. Reagent and control latexes are simply added to heat inactivated samples, mixed, rotated for 10 minutes, then observed for agglutination. Positives are then confirmed and quantitated by titration in the quantitative protocol. Crypto-LA® test is available in a 10-test kit from Wampole Laboratories, Division of Carter-Wallace, Inc., Cranbury, New Jersey 08512, 609/655-6000.

PREGNANCY PREVENTION — An unprecedented Pregnancy Prevention Program for Women on Accutane® has been implemented by Hoffmann-La Roche to reiterate the need to reduce the risk of birth defects associated with Accutane® (isotretinoin/Roche) for the treatment of severe recalcitrant cystic acne.

Two key elements of this program have never before been undertaken for a drug already approved by the FDA — a patient consent form and a patient counseling referral program. These and other elements of the Pregnancy Prevention Program for Women on Accutane® are designed to reemphasize long-standing warnings that Accutane® must not be used by females who are pregnant or who may become pregnant while undergoing treatment.

USFDA APPROVAL — A new cholesterol-screening test called LipoScan™TC has received the U.S. Food and Drug Administration's approval for marketing by Home Diagnostics, Inc. to healthcare professionals. The patented product, available through the Professional Products Division of HDI in Eatontown, New Jersey, promises a simple, accurate alternative to the expensive and time-consuming laboratory procedures currently used to measure total serum cholesterol levels. Unlike standard cholesterol-screening tests, LipoScan™ requires no complicated diagnostic instrumentation. More importantly, there is no waiting for results. They can be interpreted immediately and visually, in a one-person, 60-second procedure.

LipoScan™ instructions call for a fingerstick drop of whole blood placed on a small, disposable, colorimetric strip. After one minute, the strip changes color in response to the total cholesterol content in the blood. The color of the strip is then visually compared with a numerically coded color chart, which semi-quantitatively indicates 13 different total cholesterol values from 100 mg/dL to 550 mg/dL.

LipoScan™TC is the most recent addition to HDI's line of diagnostic products for home and professional use. The 4-year-old, privately held company is most widely known for its Diascan™-S blood glucose self-monitoring system developed to assist diabetics in measuring their blood glucose levels. For additional information on LipoScan™TC, contact HDI at 210/542-7788.

PHYSICIAN'S REFERENCE TO RBRVS — A new book published by Cambridge Health Economics Group, Inc., will help physicians estimate the potential impact on their income if a Resource-Based Relative Value Scale (RBRVS) fee schedule were adopted. The book, Physician's Reference to RBRVS, *was prepared by William C. Hsiao, Ph.D. and associates from the study group that developed the RBRVS method recently published as* A National Study of Resource-Based Relative Value Scales for Physician Services. *The comprehensive* Physician's Reference to RBRVS, *priced at $59.95, is available by mail from Cambridge Health Economics Group, Inc., 850 Boylston Street, Chestnut Hill, Massachusetts 02167.*

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REGISTRATION: 7:30 A.M.
PROGRAM: 8:00 A.M. — 3:30 P.M.

THIS SEMINAR WILL BE HELD IN THE MERCY EDUCATION CENTER AT FIFTH STREET AND UNIVERSITY AVENUE IN DES MOINES, IOWA. BROCHURES ANNOUNCING GUEST FACULTY, PROGRAM AGENDA AND REGISTRATION INFORMATION WILL BE MAILED EIGHT WEEKS IN ADVANCE OF THE SEMINAR TO ALL MEMBERS OF THE IOWA MEDICAL SOCIETY. THOSE PHYSICIANS OR OTHER HEALTH CARE PROFESSIONALS REQUIRING ADDITIONAL INFORMATION MAY CONTACT THE DEPARTMENT OF MEDICAL EDUCATION, MERCY HOSPITAL MEDICAL CENTER, AT THE ADDRESS OR TELEPHONE NUMBER GIVEN BELOW.

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About Iowa Physicians

Dr. William Parks has joined **Drs. Keith Wright, Martin Wiesenfeld** and **Dean Gesme, Jr.** at Oncology Associates of Cedar Rapids. Dr. Parks had previously practiced at the Ottumwa Clinic. **Dr. Debra K. Miller,** Ottumwa, has been appointed to the Clinical Associate Faculty of the U. of I., Department of Pediatrics. In addition, Dr. Miller practices at Pediatric Associates of Ottumwa, P.C. **Dr. Edward Ebinger,** Ottumwa, has retired after 37 years of family practice. Dr. Ebinger received the M.D. degree from the U. of I. College of Medicine and served residencies at Mt. Carmel Mercy Hospital, Detroit, Michigan and Cottage Hospital, Grosse Pointe, Michigan. **Dr. Dennis Mallory** of Mallory Medical Center in Toledo was recently elected to serve as Director of the Emergency Medical Services Council of Northeast Iowa. **Dr. Paul Beckman** has been named the new medical examiner of Scott County. Dr. Beckman practices medicine in Davenport. **Dr. B. J. England** was presented the Griswold Chamber of Commerce Community Betterment Award at a recent Chamber meeting. Dr. England is a family practitioner in Griswold. **Dr. Jeffrey A. Nerad,** Iowa City, has been named a fellow of the American College of Surgeons. Dr. Nerad is an assistant professor of Ophthalmology at the U. of I. College of Medicine. **Dr. Richard C. Wooters** was recently awarded the Service to Mankind Award at the Sertoma Club in Des Moines. Dr. Wooters, Polk County medical examiner,

(Continued next page)

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was cited for his compassion and work with grief-stricken relatives. Physicians from Surgical Associates of North Iowa, P.C., Internal Medicine Associates, P.C. and Independent Medical Surgical Group, P.C. have merged into one clinic — the Mason City Clinic. **Dr. Sterling J. Laaveg** will serve as president; **Dr. Walter Bate,** vice president; **Dr. Darrell Fisher,** secretary and **Dr. Paul MacGregor,** treasurer.

Dr. Larry Otteman was recently elected to a 2-year term on the Board of Directors of the Iowa Division of the American Cancer Society at their annual meeting. Dr. Otteman is with the McFarland Clinic, Ames, in the Department of Hematology and Oncology. **Dr. Steven Wanzek** was recently elected to fellowship in the American College of Chest Physicians at their annual meeting in California. Dr. Wanzek is a pulmonologist at the McFarland Clinic in Ames. **Dr. V. Michael Miller** has opened the Adult Medical Clinic adjacent to the Dallas County Hospital in Perry. Dr. Miller is a general surgeon in Perry. **Dr. Roger I. Ceilley,** Des Moines dermatologist and 1988 president of the American Society for Dermatologic Surgery, recently appeared on ABC's "Good Morning, America." Dr. Ceilley discussed several procedures dermatologic surgeons use to help men distressed by baldness. **Dr. James Clark,** a Clinton pathologist, received the Gold Key Award from Clinton Community Schools for making presentations at parent meetings regarding new AIDS curriculum. **Dr. Winn Gregory,** Ottumwa, has moved his general surgery practice to Fairfield. Dr. Gregory had been with Surgical Associates PC in Ottumwa for 8 years. **Dr. Donald Boldt,** Ackley, was appointed as Grundy County medical examiner for District No. 2 by the Grundy County board of supervisors. **Dr. Lyle Smith** has joined the pediatric department at the Fort Dodge Medical Center. Dr. Smith received the M.D. degree from Ross University, Roseau, Dominica and completed a residency at Raymond Blank Memorial Hospital, Des Moines. **Dr. William F. Blair,** director of hand surgery at U. of I. Hospitals and Clinics and professor of orthopedic surgery in the U. of I. College of Medicine, has won the 1989 Bunnell Traveling Fellowship. The award is funded annually by the American Society of the Hand. **Dr. Richard E. Munns,** a retired Mason City physician,

(Continued on page 139)

CARAFATE®
(sucralfate) Tablets

BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

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Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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ROSALYN P. STERLING-SCOTT, M.D.

Assistant Professor of Surgery, UCLA School of Medicine and Drew University of Medicine and Science, Los Angeles

Associate Surgeon, Department of Cardiovascular & Thoracic Surgery, Centinela Hospital Medical Center, Los Angeles

Major, U.S. Army Reserve

EDUCATION Rensselaer Polytechnic Institute, Troy, NY, B.S. Chemistry; NYU School of Medicine, New York, M.D.

RESIDENCY Boston University School of Medicine (Cardiovascular); Saint Vincent's and St. Claire's Hospitals, New York City (General Surgery)

FELLOWSHIP First Mary A. Fraley Cardiovascular Surgical Research Fellow at the Texas Heart Institute, Houston

OUTSTANDING ACHIEVEMENTS Author of numerous articles, including "Indications for Early Bypass Grafting Following Intracoronary Streptokinase"; author of "The Female Surgeon—Dawn of a New Era," chapter in *A Century of Black Surgeons—The U.S.A. Experience*; Board of Directors, Association of Black Cardiologists; Secretary, Drew Society

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was recently named Educator of the Year at the annual meeting of the Iowa Academy of Family Physicians. **Dr. John G. Terry** and **Dr. Mukund G. Nadipuram** have joined the staff at the Cancer Treatment Center in Waterloo. Dr. Terry received the M.D. degree at the University of Kansas School of Medicine, Lawrence-Kansas City, Kansas and served his internship and residency at Indiana University Medical Center. Dr. Terry is associated with Clinical Radiologists, PC in Waterloo. Dr. Nadipuram received the M.D. degree from Bangalore Medical College, Bangalore, India and completed a fellowship at University Hospital and Medical Center, Northport, New York, and at the State University of New York, Stony Brook, New York. Dr. Nadipuram has joined the practice of **Dr. Jasjeet Sangha** in Waterloo. **Dr. Hormoz Rassekh,** Council Bluffs, has been appointed to a 4-year term of membership on the National Board of Medical Examiners. Dr. Rassekh was nominated to serve on the National Board by the Federation of State Medical Boards. **Dr. Paul G. Manning** was recently elected president of the Clinton County Medical Society. Other officers included **Dr. Richard U. Nelson,** vice-president; and **Dr. Peter G. Rhoode,** secretary-treasurer.

Deaths

Dr. Holger Martin Andersen, 79, formerly of Strawberry Point, died December 16 in Naples, Florida. Dr. Andersen received the M.D. degree from the U. of I. College of Medicine and began practice in Strawberry Point in 1936, retiring in 1980. Dr. Andersen was a life member of the Iowa Medical Society.

Dr. George J. McMillan, 75, Fort Madison, died October 22 at his home. Dr. McMillan received the M.D. degree from the State University of New York Downstate College of Medicine, Brooklyn, New York and served a residency at Buffalo General Hospital, Buffalo, New York. He was in general practice in Fort Madison for 24 years and chief of staff at the Veterans Administration Regional Hospital in Buffalo, New York for 7 years until retirement in 1981.



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Papers submitted must be double spaced; triple spaced between paragraphs on 8½ x 11 pages. A title page and a short abstract summarizing the article should be included. Due to space constraints, brief papers (ideal length is 5 double spaced typewritten pages) have a better chance of timely publication. If possible, 2 copies should be submitted.

All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

The paper will be reviewed by the publications committee and a follow-up letter will be sent to the author, either accepting or rejecting the article.

All material is subject to editing by the staff copy editor to assure clarity and good grammar and to conform to *IOWA MEDICINE* style and format. The author will receive galley proof of the paper prior to publication to check for inaccuracies, but no rewriting may be done after the manuscript is set in galleys.

Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

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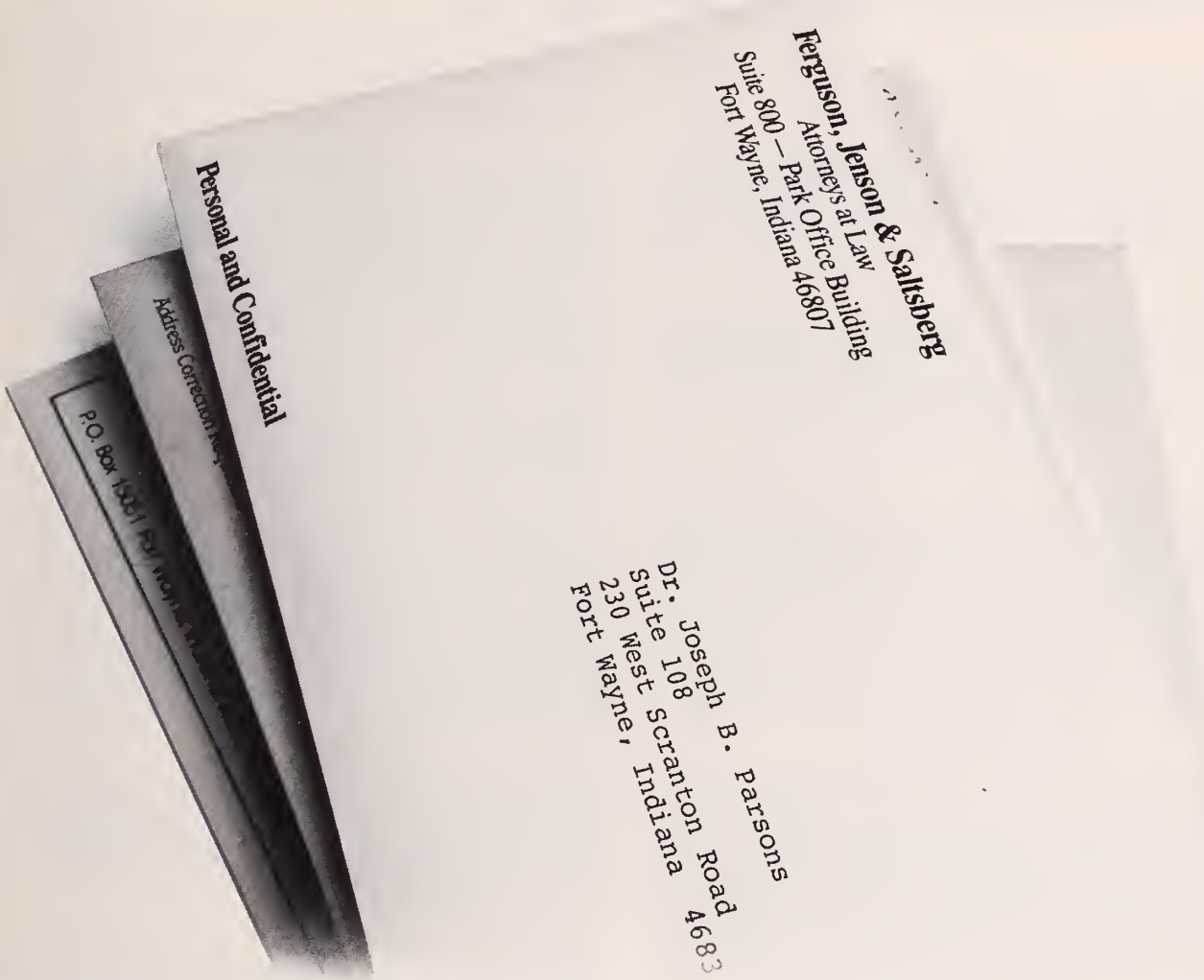
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A Source of Pride

THE IOWA MEDICAL FOUNDATION, a very special arm of organized medicine in Iowa, is an organization of which physicians can be proud. Created in the 1950s, its only function is helping Iowans.

The Iowa Medical Foundation exists to engage in, promote and contribute to the support of educational and scientific activities and projects. The multifaceted program of the Foundation reflects its original purpose.

Helping Tomorrow's Physicians

The Iowa Medical Foundation has 2 main thrusts. One is the Dr. George Scanlon Medical School Loan Fund. This loan fund honors Dr. George Scanlon, an Iowa City surgeon who inspired the program for many years. Since the Foundation's inception, $1.6 million has been loaned to over 600 medical students.

For the past 3 years, the Foundation has allocated $150,000 per year for loans for junior and senior medical students with Iowa ties. Federal funding cutbacks and the spiraling cost of medical schooling have made this financial aid increasingly crucial.

Supporting Worthy Projects

The Foundation is also privileged to have the Dr. Henry Albert Physician Benevolence and Public Health Fund. Dr. Albert practiced in Iowa and stipulated in his will that proceeds from his estate be used for activities and projects benefiting health and medicine. The Foundation has received about $263,000 from this source since the mid-1960s.

Just a few of the projects recently receiving support from the Albert Trust include:

- *The Hawkeye Science Fair* — A scientific education program which affords students the opportunity to present scientific exhibits.
- *Assistance Program For Troubled Physicians (APTP)* — A continuing program designed to assist physicians who are hampered by addiction or other problems.
- *Iowa Coalition For Comprehensive School Health Education* — A cooperative effort between the Foundation and several voluntary health agencies to promote teaching health education in Iowa schools.
- *Iowa Games* — The Iowa Games, held annually in Ames, offer competition in a variety of sports to Iowans of all ages and athletic abilities.
- *Child Abuse Identification Training Tape* — A 2-hour educational program for physicians to assist them in identifying and reporting child abuse.
- *Alcohol/Drug Induced Trauma Videotape* — A video presentation targeted for adolescents on the dangers of drug and alcohol abuse. The tape, entiled "It's A Lie," was distributed to all Iowa schools through the Iowa Department of Public Instruction.

Through financial aid to future physicians and support of these and other worthy projects, the Iowa Medical Foundation truly is fulfilling its stated purpose.

March, 1989

Iowa Medicine

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Journal of the Iowa Medical Society



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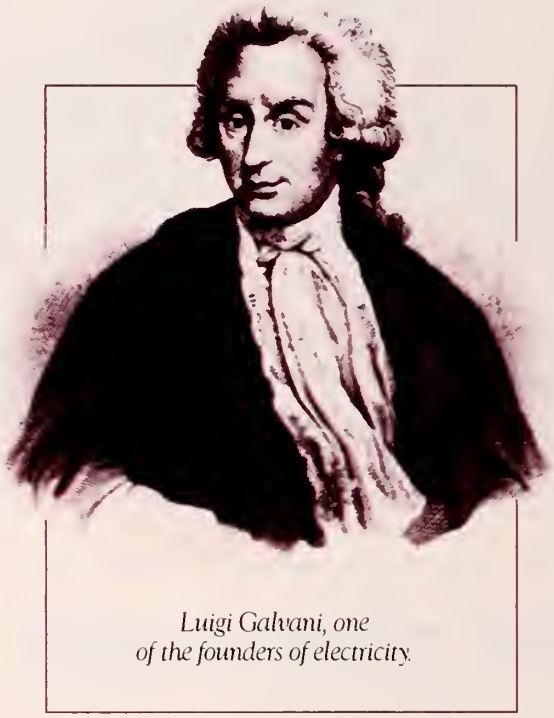
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For this University of Iowa issue, the camera creates a dramatic view of columns on Old Capitol's west portico. The perspective looks toward the College of Medicine and other elements of the UI Health Center, including the colleges of dentistry, nursing and pharmacy; University Hospitals and Clinics, Hospital School, and the Wendell Johnson Speech and Hearing Center. Photo by Jim Richardson, courtesy of the University of Iowa.

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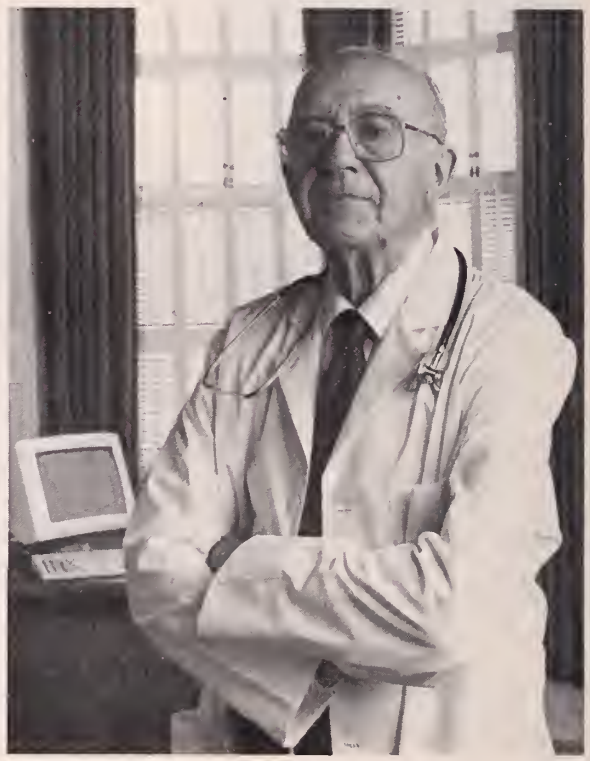
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Daniel M. Youngblade, M.D.

President's Privilege



Membership Has Its Privileges

WHEN MOST OF US ENTERED the practice of medicine, we had no idea of the challenges we would face. As time goes on, these challenges seem to come at us from every direction — increasingly inflated patient expectations, pressure from government and other third party payors, sophisticated equipment and techniques and knotty ethical issues. The list grows ever longer.

I believe the environment in which we practice will be determined by how organized medicine meets these scientific and socioeconomic challenges. For this reason, we need the Iowa Medical Society and the American Medical Association working on our behalf. One of the privileges of membership in organized medicine is having 2 such well-respected organizations speaking for us.

Many activities undertaken on behalf of the profession are not readily apparent. Success is sometimes difficult to measure. On the state level, one example is Medicare reimbursement to Iowa physicians. The IMS is in the process of educating legislators regarding low reimbursement to Iowa physicians in comparison to other areas of the country. The Society's "Medicare Partners" program has been instrumental in demonstrating that voluntary acceptance of Medicare assignment is preferable to mandatory Medicare legislation.

Nationally, the AMA has achieved several key legislative victories in the past 2 years. The AMA won passage of favorable amendments to the Medicare Catastrophic Bill and due process protection for physicians participating in peer review. The AMA defeated passage of bills which would have allowed broad access to physician data banks by malpractice attorneys and drug dispensing by non-physicians.

These challenges will not go away. Organized medicine is continually assessing the priorities of physicians and changing programs and services to meet those needs. It is your right and your privilege to have a voice in setting medicine's priorities. Please join me in supporting organized medicine by joining your county society, the IMS and the AMA.

This month's *IOWA MEDICINE*, in keeping with long tradition, is devoted to the University of Iowa College of Medicine and Hospitals and Clinics. I know you will join me in saluting our colleagues in Iowa City and their contributions to the fields of medical education and research.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

A New President's Perspective

HUNTER R. RAWLINGS III
Iowa City, Iowa



Hunter Rawlings

The comments of Hunter R. Rawlings III, new president of the University of Iowa, are based on remarks to IMS trustees, who invited Dr. Rawlings to visit with them during a December meeting.

BEFORE I CAME TO the University I was aware of the excellent reputation of the College of Medicine and now I can appreciate first-hand the basis for that fine reputation. What I've found is a skilled, highly motivated faculty whose influence on students and on the vitality of the campus goes well beyond the implied boundaries of the words, college of medicine.

When I first arrived at the University, I was unaware of the medical faculty's very large teaching responsibility for students other than the 700 students who aspire to be physicians. I have since learned that another 2,800 students take courses in the basic science departments of the College of Medicine. Among these are Ph.D. candidates in science, students in the 3 other health colleges and liberal arts majors in microbiology and biochemistry.

In addition, faculty members teach graduate physicians in the full range of specialties, conduct research and utilize advanced technologies in their care of patients at the UI Hospitals and Clinics, where a great deal of their teaching takes place. Some 500 men and women organized into 21 academic departments carry on this high level of teaching, research and patient care. This group, teaching 16 specialties and 94 subspecialties, makes up nearly one third of the full-time faculty at the University of Iowa.

Another dimension of the faculty that impresses me very much is outreach to members of the medical profession throughout Iowa. Annually, UI medical faculty members present some 200 continuing education programs for over 10,000 registrants, give more than 100 invited presentations and provide some 400 consultative services. I am very proud that this concentration of professional expertise is so readily available to Iowa practitioners, both in continuing education settings and in the UI Hospitals and Clinics.

Another significant index of the quality of the college is shown in its sources of financial support. How many Iowans realize their College of Medicine ranks among the top 10 public medical colleges in the nation in generating research funding? How many know that 89% of the College's budget of $161 million comes from gifts, grants, contracts, earned professional fees, tuition and reimbursed overhead, while only 11% comes from state appropriations?

Clearly, the College of Medicine represents a real bargain to Iowa taxpayers. But this is not to say no new state funding is needed. The UI's medical faculty earns a greater proportion of its budget through time devoted to professional services and patient care than do medical faculties at our peer institutions. We need to alleviate that burden and bring the work of the faculty into better balance. The college has a serious need for more appropriations to maintain instruction and provide academic space.

The College of Medicine has been part of the University for nearly 120 years. It developed its early renown in clinical teaching and patient care in departments with which we associate trail-blazers such as Alcock, Bean, DeGowin, Flocks, Keettel, Leirle, Sahs, Steindler, Van Epps and Warner, among many. Today there are new innovators in molecular biology, immunology, oncology, cystic fibrosis and the study and treatment of alcohol and birth defects, cardiovascular disease, occupational lung disorders, cognitive neuroscience and diseases of the elderly. These somewhat broad names imply interdisciplinary participation, which indeed is flourishing in the college today.

The health components of the UI are shining lights among the nation's top institutions. I realized this early in my still-recent association with the College of Medicine. I am very proud of the tradition Dean Eckstein and his colleagues so ably carry on — Iowa's physicians must also be proud.

2000 is Coming

JOHN W. ECKSTEIN, M.D.
Iowa City, Iowa

WITH THE 21ST CENTURY still a decade away, futurist Marvin Cetron made the following drastic demographic predictions for the year 2000 at the recent American Medical Association Leadership Conference:

- More than 25 million Americans will be over 65, and 100,000 over 100.
- In 70% of families both spouses will work.
- Nurses and paramedical personnel will be in short supply and over 80% of physicians may be in salaried practice.
- Advances in biomedical research and technology will bring unparalleled diagnostic and therapeutic possibility.

(Continued next page)



UI College of Medicine Administration — Shown in the newly occupied Human Biology Research Facility are Dean John Eckstein, (seated center); flanked by Carol Aschenbrener, M.D., senior associate dean; and William Lillibridge, assistant dean; (from left in back row) Paul Seebohm, M.D., consultant to the dean; Richard Caplan, M.D., associate dean, continuing medical education; Charles Helms, M.D., associate dean, student affairs and curriculum; Rex Montgomery, Ph.D., associate dean, academic affairs; John Kasik, M.D., associate dean, Veterans Administration Affairs; and Richard K. Schmidt, assistant to the dean.

It is human to be intrigued by the future for which we wait with varying degrees of interest and patience.

Meanwhile, the interim is significant, not to be wished or worried away in anticipation of dramatic change. For the University of Iowa and the College of Medicine, events in the interim will greatly influence the vigor with which we greet the new century.

'More than 25 million Americans will be over 65, and 100,000 over 100. . . . Advances in biomedical research and technology will bring unparalleled diagnostic and therapeutic possibility.'

Early in his tenure, President Rawlings set as a major goal development of strategic planning for the University. The College of Medicine, as one of the largest units contributing to the plan, will be expending considerable effort over the next few months to develop an action-oriented plan for years 1990-95. Planning is not new to the University or the College, but the current planning process will yield a university-wide, integrated plan.

As the College of Medicine develops its strategic plan, we are mindful of the need to address the health education and health care needs of Iowans. It is also essential we remain competitive for constant-dollar research funds.

There is excitement and optimism about the future as we prepare for the next century. In this undertaking, I am grateful for the support of the executive staff — senior associate dean Aschenbrener, Drs. Montgomery, Helms, Caplan, Kasik and Seebohm, and the Messrs. Lillibridge and Schmidt.

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College of Medicine CME Activities

LOUIS G. CRIST, M.A.
Iowa City, Iowa

The author provides an update on the extensive continuing medical education activities undertaken by the University of Iowa College of Medicine.

THE PHYSICIANS OF IOWA are served well by the continuing medical education programs offered by the University of Iowa College of Medicine. This was an observation from James F. Stiles, M.D., Cedar Rapids family physician who is one of 5 community practitioners serving on the College's Committee on Continuing Medical Education.

Dr. Stiles' observation underlines a major mission of the College of Medicine, to respond to the life-long educational needs of physicians and allied health personnel. In 1988, the College sponsored or jointly sponsored 220 formally structured continuing education programs in 38 Iowa counties:

- Registrations numbered 10,787.
- 70% of Iowa's medical practitioners enrolled in at least one CME activity conducted in 1988.
- CME registrants live in all 50 states, the District of Columbia and many foreign countries.
- There are 2,567 College of Medicine faculty participations by more than 1,200 individuals.
- Substantial numbers of non-physician health professionals were also served by the College.

Approximately 50 physicians from Iowa and surrounding states also participate each year in the College's individualized traineeships. The College also serves as a joint sponsor of 86 internal teaching conferences conducted regularly by the College's 16 clinical departments. Community physicians are invited to attend.

CME Activities and Programs

In 1970, an Office of Continuing Medical Education became part of the Dean's Office. The College's CME activities are guided by Richard M. Caplan, M.D., Associate Dean for Continuing Medical Education. (Dr. Caplan authors "CME Notebook" each month in *IOWA MEDICINE*.)

The Office of Continuing Medical Education:

- Provides information on policies and procedures for AMA Category 1 credit for medical education activities.
- Assists in planning, conducting and evaluating educational programs.
- Suggests College of Medicine faculty to serve as educators and presentors for community programs.

(Continued next page)

Mr. Crist is a program associate in continuing medical education, University of Iowa College of Medicine.

• Provides planning and program coordination between College of Medicine faculty and local sponsors of CME activities.

• Explores innovative approaches to continuing medical education.

CME programming is offered by all clinical departments and several basic science departments. Close relationships with many of Iowa's medical and health-related organizations have been fostered through the College's activities in CME. By virtue of its accreditation by the national Accreditation Council for Continuing Medical Education (ACCME), the College is permitted to designate continuing education activities it sponsors or jointly sponsors with other organizations as Category 1 continuing medical education.

'For the physicians, the fair offers an effective way to obtain information about Iowa practice opportunities.'

The Office of Community Based Programs (OCBP) in the College of Medicine coordinates the Statewide Family Practice Training Program. This program provides outreach services including the Visiting Professor Program, the Medical Practice Development Program and the Iowa Family Practice Opportunities Fair.

The Visiting Professor Program, which began in 1973, is used by University-affiliated family practice residency programs in Davenport, Des Moines, Mason City, Sioux City and Waterloo to augment their medical community's teaching resources. Visiting faculty from the University of Iowa support family practice graduate training. They are a source of continuing medical education for physicians practicing and teaching in communities where family practice residencies are located. Faculty from 18 College of Medicine departments conduct more than 200 teaching visits annually.

The Medical Practice Development Program helps Iowa communities to attract family doctors; 172 Iowa communities have received assistance from the OCBP since 1975. The OCBP helps new family physicians identify Iowa practice opportunities. Physicians training in Iowa residencies receive special attention, but services are also extended to primary care physicians training outside Iowa.

The Iowa Family Practice Opportunities Fair has been held annually for 12 years. The fair facilitates contacts between family practice residents interested in Iowa practice opportunities and communities seeking family physicians. For many communities, this means family doctors visit locally. For the physicians, the fair offers an effective way to obtain information about Iowa practice opportunities. Nearly 60 community groups meet with 60 to 70 family physicians at each fair.

Perinatal Care Program

In 1973, the UI Departments of Pediatrics and of Obstetrics-Gynecology, with funding provided by the Iowa Regional Medical Program, initiated a program to improve the care of obstetrical patients and infants in Iowa — particularly those considered to be high-risk. Directed since its inception by Herman A. Hein, M.D., professor in the Department of Pediatrics, the Iowa Statewide Perinatal Care Program maintains a regionalized system of specialized perinatal services.

A consultation team headed by Dr. Hein travels the state visiting hospitals' perinatal care facilities and providing help relative to established standards of care and specialized maternity and infant services. Frank J. Zlatnik, M.D., professor of obstetrics and gynecology, shares responsibilities with Dr. Hein in these visits. Two nurses are also members of this team.

"I just received a call from a family physician who described why several babies were alive in his home community because of the efforts of the perinatal team," Dr. Hein said. "The call was spontaneous and is the kind of feedback that gives impetus to keeping Iowa doctors and nurses up to date in this critical area of medicine."

Several other activities are offered through the perinatal care program. These include a central clearinghouse of information at University of Iowa Hospitals and

Clinics, written educational materials, liaison with health-related groups, a program where physicians and nurses come to the University for a period of practical education, training in neonatal transport for Level II nurses and a variety of other educational programs.

Educational Programs

Programs which serve as educational opportunities for medical students and provide physicians with valuable continuing education experiences are the Medical Education and Community Orientation (MECO) program for post-freshman medical students, 2-week preceptorships with family physicians across Iowa (required of third-year students) and electives in the fourth year during which seniors participate in a variety of medical experiences, including community-based clerkships in primary care.

During the summer of 1988, 50 post-freshman UI medical students, as a part of the MECO program, spent 8 to 10 weeks in 32 Iowa hospitals learning about the health care provided in a hospital setting and the operational aspects of a hospital. The College of Medicine greatly appreciates the cooperation of the practicing physicians and hospitals that shared their resources in these programs.

On April 1, 1988, a new outreach effort began in AIDS/HIV training and education. Directed by Associate Dean Charles M. Helms and coordinated by Louis G. Crist, physicians, nurses and allied health care providers across Iowa received the latest information concerning treatment techniques and research needed to meet the challenges of caring for patients with AIDS and related conditions. Iowa is one of 7 sites in 6 states comprising the Midwest AIDS Training and Education Center (MATEC). The MATEC is among 13 centers which blanket the country and receive funding from the U.S. Public Health Service. Faculty of the UI Colleges of Dentistry, Nursing and Pharmacy also contribute to this educational effort, which thus far has conducted or contributed to a variety of conferences, workshops and training programs.



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University Hospitals Reach Out

University of Iowa Hospitals and Clinics extends its services throughout Iowa to support community physicians and the hospitals in which they serve their patients.

As one of the nation's major referral hospitals, University Hospitals does not interpret that role strictly as a magnet drawing patients in need of comprehensive tertiary care to Iowa City. Rather, numerous patient care and consultive programs decentralize specialized expertise to serve patients and their physicians in their hometowns. Other programs extend collaborative assistance to community hospitals and emergency medical service volunteers.

The primary emphasis of these linkages is to provide the best possible health care for Iowans through their family physicians and hometown hospitals. Among the UIHC programs which reach from Iowa City to all sections of the state are:

The Mobile Child Health Specialty Clinics

UIHC's medical and non-medical specialists provide examinations to children with chronic or potentially handicapping disease through 9 different child health specialty clinics (pediatric/developmental, muscle disorders, adolescent, cardiac, cystic fibrosis, ENT orthopaedic, residential, and speech/language) which are sponsored as elements of Specialized Child Health Services.

During the past year, mobile clinics were held on 220 days in 26 communities throughout the state, and a total of 4,204 patient visits were recorded. This schedule brings the specialty clinics within 40 miles of every child in Iowa twice each year.

Most follow-up care required by the children seen in the clinics is provided by their local physician.

Childhood Cancer Diagnostic and Treatment Program

More than 94 community physicians participate in the ongoing care of children served by this program. A 24-hour phone consultation service maintains communication between these physicians and UIHC clinicians.

Following a diagnosis of cancer, a child is evaluated and assigned to a specific treatment protocol by UIHC's pediatric oncologists. The UIHC oncologist then shares the ongoing treatment of the child with a physician in or near the child's home community. Selected chemotherapy drugs used for these protocols are supplied and dispensed by University Hospitals' pharmacy, since they are generally not available in the community.

About 200 young cancer patients are receiving more than 65% of their care from community physicians, with the remaining 35% provided at UIHC.

Iowa Newborn Screening Program

The roots of this program began in 1965 with phenylketonuria (PKU) screening for newborns, and now provides a mechanism for screening all newborns in Iowa for 3 other genetic/metabolic disorders, in addition to PKU. These include hypothyroidism, galactosemia and branched chain alpha-ketoacidemia.

In 1988, statewide screening for hemoglobinopathies was instituted. Staff members of the Iowa Newborn Screening program and the advisory board of the Birth Defects Institute continually evaluate the program to determine if other tests should be added.

Statewide Epidemiology Education and Consultation

This program was established in 1976 to provide all Iowa hospitals with support and training to meet requirements of the JCAHO and health codes of the state of Iowa.

More than 98% of the state's acute hospitals and 15 chronic care and specialty institutions participate in the statewide program.

Seminars, extension training and immediate consultation services on infection control practices are also offered through UIHC.

Worksafe Iowa

This occupational medicine, industrial hygiene and occupational health education outreach program provides comprehensive, affordable occupational health services to Iowa's business, industrial and agricultural sectors. Initial funding for the program was received from the W.K. Kellogg Foundation.

WORKSAFE IOWA'S occupational medicine program provides training for both community health care providers and future occupational medicine professionals and consultation to community physicians and hospitals with business outreach services.

Alzheimer's Disease Program

Since the beginning of this program, 45 nursing homes in Iowa have used this program to develop dedicated Alzheimer's nursing units.

The program began with community educational outreach programs coordinated and/or given by gerontological clinical nursing specialists from UIHC.

Last year, the Department of Nursing provided 22 community education programs and 2 continuing education programs for health care professionals in Iowa.

Rural Comprehensive Care for Hemophilia Patients

To ensure coordinated treatment for hemophilia patients, 237 physicians and 217 dentists from Iowa and surrounding states participate in this program by sharing the management, care and treatment of hemophilia patients with specialists from UIHC.



Douglas A. Behrendt, M.D., professor and chairman, division of cardiothoracic surgery at UIHC, reviews a coronary angiogram with Timothy A. Thomsen, M.D., a cardiovascular/thoracic surgeon at St. Joseph Mercy Hospital in Mason City. Dr. Thomsen recently completed 2 months of study in advanced surgical techniques at UIHC.

Care plans are developed, and reports and information about the patient's condition are sent to UIHC for analysis. A 24-hour phone service provides consultation and assistance in emergencies.

Statewide Emergency Services

In 1978, UIHC established an emergency medical services learning resources center (EMSLRC) to develop and conduct courses in emergency and critical care.

The EMSLRC provides training for some 4,500 physicians, nurses and other health care professionals annually in the clinical management of medical and traumatic emergencies.

For the convenience of Iowa's health practitioners, about two-thirds of the EMSLRC courses are conducted on an outreach basis in community hospitals and other locations around the state.

In 1983, the EMSLRC began sponsorship of the Rural Emergency Cardiac Care

(Continued next page)

Project. The purpose of this ongoing study is to determine if the use of defibrillators by ambulance personnel first responding to cardiac arrest victims increases survival when used in conjunction with community-wide training in cardiopulmonary resuscitation. Other major programs of the EMSLRC incude cardiopulmonary resuscitation, advanced cardiac life support, outreach nursing education, advanced trauma life support, a neo-natal resuscitation program, EMT-paramedic training, advanced trauma life support, computer-based education and pediatric advanced life support.

Transplantation Network

The organ and tissue transplantation program at UIHC began in 1955 with 3 cornea transplants.

Since that time, thousands of cornea, heart, liver, kidney, skin, pancreas, heart-lung, lung, bone and bone marrow transplants have been completed at the University of Iowa Hospitals and Clinics.

UIHC's leadership in international organ procurement and transplant networks has been extended with the establishment of a statewide organization. Representatives of Iowa hospitals and public service agencies participate in ongoing education efforts.

Members of University Hospitals' transplantation program present community forums on an ongoing basis for health care professionals and members of the general public.

In 1989, UIHC and Iowa Methodist Medical Center (IMMC) in Des Moines expanded their existing collaborative kidney transplantation agreement and made provision for a UIHC transplant surgeon to be located in Des Moines at all times to provide 24-hour coverage to IMMC patients.

UIHC is committed to serving patients in support of community physicians and hospitals throughout the entire state, in keeping with its established role as the state's comprehensive, tertiary referral center.



CYNTHIA E. HOOVER

Hometown: Manchester, Iowa
Fourth-year honors student, UI College of Medicine
Harold S. Brady Scholarship recipient, 1987-1989
Member: Iowa Medical Society, AMA Medical Student Section

"Medical students at Iowa have experiences and involvement in research that they might not get at other schools, because the faculty here is so interested in teaching and in our ideas for research. And we're thankful to have Iowa Medical Society members as role models. Working with them on the formation of IPMIT and on the malpractice crisis has been an education, too. Medical students need to know what's happening in medicine so they will be prepared to deal with the administrative side of clinical practice.

"I'd like to stay in Iowa after I graduate, because the people here live up to the Midwest's reputation for friendliness."

Contributions to the UI College of Medicine help sustain Iowa's tradition of excellence in teaching, research and patient care.

The University of Iowa Foundation Alumni Center Iowa City, Iowa 52242

VA Cooperation Strengthens Vets' Care, Education

A unique partnership between the University of Iowa College of Medicine and 3 Veterans Administration hospitals is described.

IF HOSPITALIZED VETERANS enjoy better care in Iowa than they might elsewhere and medical students and residents learn to diagnose and treat conditions they might not otherwise encounter in a school setting, credit a unique linkage of 3 Veterans Administration hospitals and the University of Iowa College of Medicine.

Located literally across the street from each other, the College and the Veterans Administration Medical Center in Iowa City share clinical skills, educational and research efforts so successfully their relationship is viewed as a model by the Association of American Medical Colleges and the Veterans Administration.

While distance precludes the College presence from being as obvious in VA hospitals in Des Moines and Knoxville, there is continual 2-way flow of information. A variety of mutually beneficial sharing agreements exist, evolving and expanding as need develops.

Recently, the partnership opened the way for the Iowa City VA to launch an in-house angioplasty program while relying on cardiac surgery at the University Hospitals and Clinics for backup. Thus the Iowa City VAMC became the only VA program in the country doing angioplasties without in-house cardiac surgery.

In Des Moines, patients are treated by UI resident physicians in all the subspecialties. At the Knoxville VA Hospital, while no formal affiliation with the University exists, residents from Iowa City provide consultative services.

For the hospitals and the College of Medicine, the affiliation is a powerful tool for staff recruitment and retention. VAMC physicians hold clinical appointments to the college faculty, while full-time medical faculty members make rounds and conduct research in the Iowa City facility.

Affiliation with the College of Medicine and University Hospitals and Clinics provides access to sub-specialty services offering cost-effective comprehensive care to veterans. It also permits access to high-technology equipment, procedures and treatment without duplication. An example is the UI kidney stone lithotripsy program, which allows the Iowa City VA hospital to serve as a referral center and offer the procedure to all 172 VA centers across the nation. The UI bone marrow program is available as backup.

As with any successful partnership, contributions come from both directions. The Iowa City VAMC tissue typing laboratory — the only one in Iowa — supports the transplant program in UIHC. The veterans facility houses the UI Diabetic Endocrinolgoy Research Center, where research is funded by

(Continued next page)

the National Institutes of Health. All 3 Iowa VA hospitals provide learning opportunities for students, residents and staff among a unique patient population.

Space between the organizational entities is bridged by the College of Medicine's "Deans Committee," whose membership embraces faculty and administrators from both UI and the VAMC, while the Iowa City VAMC chief of staff, John E. Kasik, M.D., is an associate dean of the College of Medicine. Both he and VAMC Administrator Gary L. Wilkinson meet regularly with Dean John W. Eckstein and other College of Medicine administrators and Wilkinson is an adjunct lecturer in the College's graduate program in hospital and health administration.

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Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

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OVERDOSAGE
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Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Charles M. Helms, M.D.

Questions and Answers



Today's Medical Students And the Iowa Curriculum

Physicians are naturally interested in the following generation. Charles M. Helms, M.D., associate dean, student affairs and curriculum, University of Iowa College of Medicine, offers comments on students and what they are taught.

What do you look for in applicants today?

Mostly the same qualities we sought in the past. We look for those who sincerely wish to devote their lives to medicine. We try to identify characteristics which have been found to be important to sucessful practice.

Sound academic performance in prerequisite science courses remains important, but a science major isn't required. A number of students have undergraduate majors in history, art, music, humanities and social sciences.

What are students like today?

Students are more cognizant of the "realities" of health care. The media are flooded with "good news" and "bad news" stories: biomedical breakthroughs, the malpractice insurance crisis, problems of the uninsured and underinsured, etc. At the same time I detect a high degree of commitment and a willingness to become involved with the issues. The fact many students come in with experience in health care may account in part for this.

Our students are a diverse lot. Many have advanced degrees, have been in business or are experienced in other ways that add depth to the student body. They are increasingly diversified in ethnic and cultural background, largely due to the efforts of the Equal Opportunity Program staff. Today, 9.6% of the class comes from minority groups previously underrepresented in medicine. Women now comprise nearly a third of the class.

The students are diverse in skills. It is no surprise that they're attuned to technology and computer literacy is a given.

They have extracurricular interests, too. They edit a monthly newspaper, participate in the 13 student organizations in the college and, like their predecessors, can keep the medical school jazz band on stage till the wee hours.

What are features of the curriculum?

The curriculum is not static. It's still firmly grounded in medical science, the content of which grows continually. We seek to broaden students' perspective beyond the sciences as early and effectively as possible, however. Exposure to the medical humanities: medical history, literature and ethics, is offered, often in informal settings.

First-year students take "Human Dimensions in Medicine." In small discussion groups, students' attitudes about medicine and medical education are discovered and broadened.

(Continued next page)

Faculty members and second-year students participate as partners in these sessions.

Second-year electives offer the opportunity to learn about economic, legal and sociopolitical forces affecting medicine. Students may explore medical care in settings at home and abroad, or study medical jurisprudence, bioethics and health economics.

Even summer can be a time for learning. The Medical Education-Community Orientation program matches students with Iowa physicians and hospitals after the first year. Summer research fellowships are also available. These are great opportunities to put the coursework of medical school into use.

Iowa also offers the Medical Scientist Training Program, which is aimed at preparation for careers in academic medicine with emphasis on basic and clinical research. It provides for concurrent graduate education and original research leading to the Ph.D. degree with a full complement of clinical studies necessary for the M.D. degree. With few exceptions, this program can be accomplished in 6 to 7 years of continuous study.

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- Share rotation of 5:00-10:00 p.m. week night call
- Represent student health in the medical community
- Promote health education/wellness to patients and staff
- Cooperate with director and staff in overall management and program outreach
- Serve on Health Service Council

Qualifications
Required:
- Earned medical degree as family practice physician or internist
- Eligible for South Dakota licensure to practice medicine
- Interest in and successful experience with young adults
- Successful experience in maintaining rapport with professional peers and usual clinic office personnel

Preferred:
- College student health experience
- Training/experience with eating disorders, human sexuality and chemical dependency

Benefits and Salary
- Contract negotiable 9-10.5 month
- Health insurance, retirement benefits and medical malpractice insurance
- Salary competitive and commensurate with qualifications

APPLY BY APRIL 25, 1989

Send letter of application, resume and 3 current references, addresses and phone numbers to **Don Smith, Director of Student Health and Counseling, 202 West Hall, Box 510, South Dakota State University, Brookings, South Dakota 57007 (605/688-4157).** Closing date is April 25, 1989 or until position is filled.

South Dakota State University is an Affirmative Action/Equal Opportunity Employer (Female/Male). Minorities and women are encouraged to apply. Proof of eligibility for employment is required by the Immigration Reform and Control Act of 1986.

YOCON®
YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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CEDAR RAPIDS

HEART SYMPOSIUM

FOR THE PRACTICING PRIMARY CARE PHYSICIAN

APRIL 22, 1989
STOUFFER FIVE SEASONS HOTEL
CEDAR RAPIDS, IOWA

KEYNOTE SPEAKERS

Richard N. Fogoros, M.D.
Director, Clinical Electrophysiology
Allegheny General Hospital
Pittsburgh, PA

J.H.Ehrenhaft, M.D.
Professor Emeritus
Division, Cardiothoracic Surgery
University of Iowa, Hospitals and Clinics

DINNER SPEAKER

Jim Walden
Head Football Coach
Iowa State University

Spouses program available-see registration on back

Cedar Rapids Heart Symposium for the Practicing Primary Care Physician • April 22, 1989

Course Objectives and Intended Audience

This course is designed to provide family practitioners, internists and other primary care physicians with practical approaches to common cardiovascular disorders. The course will emphasize diagnostic evaluation, treatment modalities and day to day management of these disorders from the perspective of the primary care physician. Specific topics will include updates on: management of stable and unstable angina, new approaches to the treatment of acute myocardial infarction (including thrombolytic therapy), evaluation and treatment of patients with congestive heart failure, risk factor modification for coronary artery disease, indications for pacemaker implantation and follow up, approach to the patient with sudden cardiac death, evaluation and therapy of common cardiac arrhythmias, new aspects of hypertensive therapy, and evaluation of the patient with syncope. Surgical topics will include indications for and post-operative management of patients undergoing coronary artery bypass and valve procedures. Discussion will also cover surgical management of recurrent ventricular tachycardia including implantation of the automatic implantable cardioverter defibrillator.

Accreditation and CME Credit

As an organization accredited by the Iowa Medical Society for continuing education, the Cedar Rapids Medical Education Program certifies that this continuing medical education offering meets the criteria for 7 Credit Hours in Category 1, provided it is used and completed as designated.

Exhibitors

Pharmaceutical manufacturers will have representatives available to answer questions and distribute information.

Program Co-Directors

A. Ersin Atay, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

Todd T. Langager, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

James M. Levett, M.D., F.A.C.S.
Staff Cardiothoracic Surgeon
St. Luke's Hospital/Mercy Medical Center
Clinical Associate Professor
Division of Cardiothoracic Surgery
University of Iowa Hospitals and Clinics

Faculty

Lawrence J. Cook, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

David A. Rater, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

William G. Meffert, M.D., F.A.C.S.
Staff Cardiothoracic Surgeon
St. Luke's Hospital/
Mercy Medical Center

Wilson W. Strong, Jr., M.D., F.A.C.S.
Staff Cardiothoracic Surgeon
St. Luke's Hospital/
Mercy Medical Center

M. Naser Payvandi, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

James E. Tatkon-Coker, M.D., F.A.C.C.
Staff Cardiologist
St. Luke's Hospital/
Mercy Medical Center

Guest Faculty

Richard N. Fogoros, M.D.
Director, Clinical Electrophysiology
Allegheny General Hospital
Pittsburgh, PA

J.H. Ehrenhaft, M.D
Professor Emeritus
Division of Cardiothoracic Surgery
University of Iowa Hospitals and Clinics

After Dinner Speaker

Jim Walden
Head Football Coach
Iowa State University

Registration

The deadline for course registration is April 10, 1989. Registration is limited.

The registration fee covers course materials, continental breakfast, lunch, refreshments and dinner.

There is no additional charge for a spouse to attend any of the social functions.

Cancellation Policy

A full refund of registration is available if the cancellation notice is received in writing by April 10, 1989. After that time no refund will be given.

Accommodations

The Stouffer Five Seasons Hotel has set aside a block of rooms at a preferred rate for the symposium attendees.

Reservations should be made directly with the Stouffer Five Seasons Hotel by calling (319)363-8161. To assure group rate, please identify yourself as a Cedar Rapids Heart Symposium participant.

Transportation

The Cedar Rapids airport is only a 15 minute drive from the Five Seasons. There are regular flights scheduled throughout the day.

After arriving in Cedar Rapids, car rental is available from several national firms.

Taxi service from the airport is available at all times.

Stouffer Five Seasons Hotel has complimentary transportation between the hotel and airport. This transportation runs approximately every half hour and a direct line to Stouffer's is available at the airport terminal.

Events

Early Registration with hospitality suite will be available Friday, April 21 from 6:00 p.m. to 9:00 p.m.

Continental Breakfast with morning registration will be Saturday, April 22 from 7:00 a.m. to 7:45 a.m.

Lunch will be provided for program participants at Stouffer from 12:00 Noon to 1:00 p.m.

Spouse's Program will be available. This will include a luncheon at the Roosevelt Hotel with a style show by Armstrong's Department Store. Door prizes will be given away during this function.

Evening Events include a social hour from 6:00 p.m. to 7:00 p.m., dinner at Stouffer beginning at 7:00 p.m., and an after-dinner talk by Jim Walden, Head Football Coach, Iowa State University.

For further information contact Roman Frigge, Symposium Coordinator at **(319) 369-7434**.

This symposium is sponsored in part by St. Luke's Hospital and Mercy Medical Center of Cedar Rapids.

REGISTRATION FORM

Cedar Rapids Heart Symposium
For the Practicing Primary Care Physician
April 22, 1989

First Name _____ MI _____ Last Name _____

Address _____

City _____ State _____ Zip Code _____ Phone _____

❑ My spouse will be attending the spouses program.
❑ My spouse will be attending the evening events.

Registration Fee - $75.00

Make check payable to: Cedar Rapids Heart Symposium

Course materials, all events and meals for participants and spouses are included in the fee. ***Please include a check with your registration form and mail to:***

Cedar Rapids Heart Symposium Coordinator
1026 A Avenue NE
Cedar Rapids, IA 52402

Telephone inquiries to **(319) 369-7434**.

For official use only.
Registration No.

Historical Vignette

The Way It Was in Sibley

Presented by James H. Thomas, M.D., of Sibley, Iowa, there now rests in the headquarters of the Iowa Medical Society an old, browned, partially crumbling ledger book, a mostly handwritten record of the meetings of the Osceola County Medical Society, dating from its first meeting November 10, 1903. The meeting was attended by 8 doctors: Cady, Ely, Heetland, Hough, Langenhurst, Maher, Neill and Nelson.

At the meeting "the Constitution and By-Laws for county societies as proposed by the committee on organization of the American Medical Association, and recommended for adoption by the Iowa State Medical Society" was considered. That organization plan was adopted. It was decided the new society should meet twice a year, in May and December, and that annual dues should be $3. The first chairman (president) was Dr. Ely; vice-president, Dr. Cady; treasurer, Dr. Heetland; secretary, Dr. Langenhurst. The meeting was held in the Windsor Hotel in Sibley, with the room rent $2, dinners 75¢ each and cigars 5¢.

The last minutes were recorded in the journal in 1940. The record shows in the intervening years the usual joys and tribulations of county medical societies were experienced. As early as November 22, 1905, a malpractice suit was announced, one member accusing another of unprofessional conduct. The accused was supported and exonerated by the Society; the accuser was expelled.

New officers were elected annually, new members added, old members died, papers on clinical subjects presented by members from the very first days of the meetings, dues gradually increased and, on November 23, 1920, it was unanimously voted to increase the fee for obstetrical care from $25 to $30.

Meetings were eventually held every 2 months in a doctor's office, at the Court House or at the Windsor Hotel. In 1931 the Sibley City Council proposed a special tax on all physicians' office equipment. The Society promptly voted to reject such a proposal and wrote a feisty, well-reasoned reply. End of proposal.

Most of the minutes are in beautiful handwriting by the secretaries (Langenhurst, Crowley, Winkler), totally unlike the usual physician's scribble. The notes reflect the effects of World War I, the great depression of the 1930's and the slowly evolving changes in the practice of medicine. On reading these records one is impressed by the insistence on good clinical practice and the maintenance of a personal relationship between physician and patient.

A record dated Dec. 12, 1939 notes a decision to recommend discontinuing the service of a certain welfare worker. She was deemed "too old, being seventy, incompetent, untactful, indiscreet, showing partiality, and exceeding her authority."

Nowhere in this 37-year record of an Iowa county medical society is a doctor or hospital called a "provider." "Third parties" were unknown and so unmentioned. Here one senses an earnest group of doctors, not always agreeing with one another, but devoted to the practice of good medicine, independent and loyal to the best medical principles. The last minutes, dated October 15, 1940, record the decision to start a county-wide diphtheria immunization program. — *John Martin, M.D., Clarinda, chairman, IMS Historical Committee.*

Curious Cases

A Painful Experiment

DANIEL BRAY, M.D.
Algona, Iowa

A TINY TOT WAS BROUGHT in by Mother because he had a swollen pink-red penis glans and foreskin. There was no real skin area of recognizable trouble, but the entire glans and foreskin were greatly swollen and watery reddened.

In those pre-cortisone days, a soothing cream was given to Mother to apply and leave "it" out in the open as much as possible. A couple of hours later, Mother called to report she saw a hair sticking out of the red and swollen end of the penis.

I made a house call to investigate and saw a straight piece of human-like hair sticking out

(Continued next page)

of the swollen folds of the corono-foreskin area. I applied forceps to the hair and gently tugged. It revealed itself to be wound around the penis just at the corona. Five windings were unwound, with the baby's 2 sisters watching.

Later, Mother called to tell me one of the girls admitted they were playing and wound a piece of long hair around their brother's penis, just to do it.

All Choked Up

I started out one day with the message that I had to hurry to the local tavern because there was a man there who appeared to be dead. His companions had taken him outside the back of the tavern to see if better air would revive him.

When I arrived, I saw a crowd of about 6 men holding the dead man up by the armpits. They were convinced the man had died in the beer tavern but none of them knew what to do other than keep his head up. My heart was heavy with the dread of death itself getting to that tavern before I did!

I couldn't get heart sounds, pulse, respirations or anything else to tell me the man was alive. Finally, I noticed a tiny trickle of reddish brown at one corner of his mouth and rammed my finger into his throat. He nearly scared me off this planet with a great snorting suck as I pulled out a chunk of chewing tobacco. He lived to be mad as he could be at me for hospitalizing him one day to see if anything else contributed to his "death."

Comprehensive School Health Education in Iowa: How Physicians Can Help

The Iowa Medical Society Auxiliary and the Iowa Medical Society have played a pivotal role in Iowa's comprehensive school health education. In 1984, following an earlier planning meeting involving Richard Caplan, M.D., associate dean of the University of Iowa College of Medicine, his associate, Sandra Pellens-Meinhard, and Marian Weyhrauch and Sandra Nichols of the IMS Auxiliary, the Auxiliary and Medical Society stimulated 16 other organizations to help them found the Iowa Coalition for Comprehensive School Health Education.

The Coalition which now consists of 25 member organizations, promotes comprehensive school health education and sponsors 2 annual conferences. The seventh annual fall conference will take place September 27, 1989, at the Scheman Center at Iowa State University. The third annual summer conference, the Lakeshore Wellness Conference, is scheduled at Buena Vista College in Storm Lake for June 11-14, 1989.

Concerned physicians can help promote comprehensive school health education in several ways:

- **Support the Lakeshore Wellness Conference.** To attend the conference, participants must comprise a team of at least 3 individuals. Since anyone may be a team member, physicians could join the team from their school district. Physicians could also encourage local medical societies to help defray the team's expenses of $140 per person.
- **Volunteer to serve on your district's Human Growth and Development Resource Committee.** Senate File 2094 requires programs for school-aged children, starting in kindergarten, to address "experiences relating to the development of life skills and human growth and development" and requires all school districts to appoint an advisory committee.

The committee will address and make recommendations to the board every 3 years concerning the school district's curriculum on topics such as self-esteem, responsible decision making, interpersonal relationships, discouragement of premarital adolescent sexual activity and family life.

- **Volunteer to serve as a speaker.** The Iowa Coalition plans to start a Speakers' Bureau, organized by county, to serve as a resource to school districts. If you would like to be listed as a potential speaker, contact Leslie Weber, M.D., Department of Family Practice, University of Iowa College of Medicine, Steindler Building, Iowa City, Iowa 52242.
- **Join the Iowa Coalition for Comprehensive School Health Education as an individual member.** The annual $10 fee entitles members to receive the **Health Gram,** a newsletter devoted to health education issues relevant to Iowans.

MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

"MERCY HEART DAY"

MAY 3, 1989

GUEST FACULTY

KEVIN DELLSPERGER, M.D.
DIVISION OF CARDIOLOGY
UNIVERSITY OF IOWA HOSPITALS/CLINICS
IOWA CITY, IOWA

STEVEN GOLLUB, M.D.
DIVISION OF CARDIOVASCULAR DISEASES
KANSAS UNIVERSITY MEDICAL CENTER
KANSAS CITY, KANSAS

DAVID HARRISON, M.D.
DIVISION OF CARDIOLOGY
UNIVERSITY OF IOWA HOSPITALS/CLINICS
IOWA CITY, IOWA

WAYNE PETERS, M.D.
DEPARTMENT OF MEDICINE
UNIVERSITY OF COLORADO SCHOOL OF MEDICINE
DENVER, COLORADO

ROBERT REA, M.D.
DEPARTMENT OF INTERNAL MEDICINE
UNIVERSITY OF IOWA COLLEGE OF MEDICINE
IOWA CITY, IOWA

JERRY REED, M.D.
DEPARTMENT OF INTERNAL MEDICINE
UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE
OMAHA, NEBRASKA

MARTIN SCHWARZE, D.O.
DEPARTMENT OF MEDICINE
ST. LOUIS UNIVERSITY HOSPITALS
ST. LOUIS, MISSOURI

TOPICS

"TREATMENT OF ACUTE MYOCARDIAL INFARCTION FOR THE 1990'S"

"TREATMENT OF VENTRICULAR ARRHYTHMIAS"

"FACTORS THAT INFLUENCE COLLATERAL BLOOD FLOW"

"CHOLESTEROL AND CORONARY DISEASE: REDUCING THE RISK"

"THE INFLUENCE OF THE AUTONOMIC NERVOUS SYSTEM ON CARDIAC ARRHYTHMIAS"

"CAN ATHEROSCLEROSIS REALLY BE PREVENTED WHILE TREATING HYPERTENSION?"

"CARDIAC ECHO DOPPLER WITH COLOR FLOW"

PANEL DISCUSSION: AFTERNOON SESSION

Approved by Mercy Hospital Medical Center, an IMS-accredited CME organization, for 6 hours Category 1/A.M.A. Physicians' Recognition Award.

Nursing CEU's: 0.7 (7 contact hours).

Application has been made for AAFP and AOA accreditations.

Physician Fee	$55.00
Physician's Assistant Fee	$25.00
Nursing Fee	$25.00
Paramedical Fee	$25.00
Complimentary	Residents, Interns & Medical Students

ADVANCED REGISTRATION REQUESTED!

THE SEMINAR WILL BE HELD IN THE MERCY EDUCATION CENTER AT FIFTH STREET AND UNIVERSITY AVENUE IN DES MOINES, IOWA. PARKING IS AVAILABLE ADJACENT TO THE MERCY EDUCATION CENTER.

CONTACT: DEPARTMENT OF MEDICAL EDUCATION
MERCY HOSPITAL MEDICAL CENTER
SIXTH AND UNIVERSITY
DES MOINES, IOWA 50314
(515) 247-3042

IOWA METHODIST MEDICAL CENTER

THROCKMORTON SURGICAL SOCIETY SPRING MEETING

ENDOCRINE SURGERY

Friday, May 5, 1989

Jester Auditorium
Iowa Methodist Medical Center
Des Moines, Iowa

GUEST FACULTY

Robert J. Corry, M.D.
Professor & Head of Dept. of Surgery
University of Iowa
Iowa City, Iowa

Orlo H. Clark, M.D.
Professor of Surgery
University of California
San Francisco, California

Clive S. Grant, M.D.
Associate Professor of Surgery
Mayo Clinic
Rochester, Minnesota

Nelson Gurll, M.D.
Professor of Surgery
University of Iowa
Iowa City, Iowa

Edwin L. Kaplan, M.D.
Professor of Surgery
University of Chicago
Chicago, Illinois

Norman W. Thompson, M.D.
Henry King Ransom Professor
Chief, Division of Endocrine Surgery
University of Michigan
Ann Arbor, Michigan

TOPICS

"Diagnosis, Localization and Treatment of Primary Hyperparathyroidism"

"Evaluation and Treatment of Thyroid Nodules and Thyroid Cancer"

"Re-operative Parathyroid Surgery"

"Surgical Treatment of Papillary Thyroid Cancer"

"MEA Syndromes"

"Benign Thyroid Diseases"

"Diagnosis and Treatment of Insulinomas and Glucagonomas"

"Carcinoid Tumors and Carcinoid Syndrome"

"Current Trends in Adrenal Surgery in 1989"

"How to Find the Occult Gastrinoma"

"Recent Advances in Whole Organ Pancreatic Transplantation"

Physician Fee	$125.00
Resident's Fee	$ 35.00

Approved for 6 hours Category I
CME credit/AMA Physician's Recognition Award

CONTACT: SURGICAL EDUCATION OFFICE
Iowa Methodist Medical Center
1200 Pleasant Street
Des Moines, Iowa 50309
(515) 283-6076

Man's Conception of Disease — A Historical Journey

JOHN P. BENNETT, M.D.
Iowa City, Iowa

The author traces the fascinating history of man's understanding of disease.

THE HISTORY OF MEDICINE probably began 50-100 thousand years ago. Medicine arose from primal sympathy of man with man and the desire to help those in need. It originated from the civilizations of Mesopotamia, Egypt, India and China.

Ancient Medicine

In the beginning the riddle of disease was the same around the world. Primitive man viewed disease as the result of a malevolent influence exercised by a supernatural being or by another human being, alive or dead. Therefore, it was a magical or religious rather than a natural phenomenon. It was believed to be caused by projection of some morbid material or influence into the body. The evil influence could break the bones, suck out the marrow, drink the blood, gnaw the intestines and the heart and devour the flesh. Treatment was carried out by the medicine man who would extract evil influences by suction through a tube.

Disease was also thought to be caused by abstraction of the soul from the body. A soul catcher was employed. He would fall into a trance, send his soul to find that of the victim and persuade it to return while chanting an account of his journey. If successful, upon awakening he would display a bead said to contain the soul and return it to the body by rubbing it against the victim's head. Other forms of treatment for diseases included emetics, purgatives, diuretics, diaphoretics and bleeding. Their use was guided by an early form of astrology.

The Chinese developed a system of medicine that centered around the doctrine of the pulse. The basic idea is that each part and organ had its proper pulse. If the pulses were in harmony, it meant health. Discord meant disease.

Greek Medicine

The foundations of Greek civilization and medicine rested on the earliest ages of history and drew heavily upon their predecessors, the Babylonians, Indians and Egyptians. Through Hippocrates (460-375 B.C.) Greek medicine reached its zenith and became an art, a science and a profession. He has been known for 2000 years as the Father of Medicine.

Dr. Bennett is a fellow with the Department of Internal Medicine, Division of Hematology-Oncology, University of Iowa Hospitals and Clinics.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR APRIL 1989

The life of Hippocrates divides the history of medicine. Hippocrates taught disease was natural. He was the first to grasp the concept of medicine as an art based on accurate observation and as a science of man and of nature.

The fundamental theory of Hippocratic medicine was the doctrine of the 4 humors or the humoral theory. Hippocrates believed external causes such as the cold, the sun or the changing winds were responsible for disease by unbalancing the humors. The body kept the humors properly mixed by its innate heat. Whatever may be the primary cause of the change in the humors, the nature of the body itself tends to restore conditions to the norm. It often occurred suddenly and was called the crisis. The crisis was accomplished on a special day and was accompanied by a critical discharge or a drop in body temperature.

'The influence of astrology through the ages is apparent from the number of common words having an astrological origin such as lunatic, disaster, saturnine and ill-starred.'

The greatest Greek physician after Hippocrates was Galen (130-200). Galen's view of the nature of disease was similar to that of Hippocrates with many refinements and subdivisions. In addition to the 4 humors, he believed all natural objects were composed of 4 elements — earth, air, fire and water — and all natural objects had 4 qualities — hot, cold, dry and moist. He also believed the soul received images from the body and the mind which were influenced by the condition of the body. He had a great faith in herbs and drugs.

Galen had an answer for everything. He described the origin of many diseases and outlined their cures. He is the incarnation of the physician who regards himself as omniscient.

Medieval Medicine

The stream of scientific medicine that flowed through Greek civilization for more than 1,000 years was apparently lost in the morass of the middle ages, a time of decadence and stagnation. Understanding of the nature of disease was archaic.

Diagnosis and prognosis were based on astrology and uroscopy (examination of urine). The urinal was the emblem of medical practice. The study of urine was divided into 2 parts. The first involved color and substance and the second the things urine contained. Different colors were related to various fevers and diseases. If the meniscus was thick, the patient suffered from a pressure of phlegm in the posterior part of the head. If thin and red, there was a boiling of the bilious humor on the right side of the head. If there were large adherent bubbles, illness would be prolonged.

Astrology had a profound influence on medicine. Every planet and sign of zodiac presided over a part of the body and all diseases were considered dependent upon the movements of the planets. These movements determined the efficacy of drugs, the proper times to prepare medicines and for bloodletting. The influence of astrology through the ages is apparent from the number of common words having an astrological origin such as lunatic, disaster, saturnine and ill-starred.

Medicine in the middle ages was a restatement of modified theories of the Greeks and there was no advance in man's understanding of the nature of disease.

Renaissance and the Rise of Anatomy and Physiology

The Renaissance and its scientific revolution gave birth to new ideas about the nature of disease. The most violent reform centered about Paracelsus (1493-1541). This was a time when straying from the beaten path in any field of knowledge was a damnable heresy. Paracelsus spoke out boldly for independent study and the right of private judgement. His contemporaries loathed him. He was described as a drunken quack.

Through Paracelsus great stimulus was given to the study of chemistry and pharmacy. He was the first to promote the use of chemical substances in treatment; he recommended new forms of medicinal preparations as more efficacious than the syrups which had been in vogue. He sustained the doctrine of signatures which enjoyed great popularity in treatment of disease. It was based on the idea that the source of drugs often resemble the diseased organs for which they were used to treat. Par-

acelsus had little immediate effect on medical thought, largely on account of his personal vagaries, but he made men think.

The Renaissance saw a revival of anatomy and physiology. Vesalius advanced human anatomy to the level of a science. Earlier teachers of anatomy limited themselves to sitting above the cadaver reading from Galen while a prosector did the dissection and tried to square what he found with what Galen said should be there. Any anatomical structure which did not conform to his description was alleged to have changed since Galen's time.

'It was not uncommon for medical students to be new high school graduates and a medical degree might be issued without the student ever having examined a patient.'

Andreas Vesalius (1514-1564) found in the course of his dissections that current teaching was full of errors. While in his twenties he published his great masterpiece *De humani corporis fabrica libri septem (The Fabric of the Human Body in Seven Books)*, the first accurate text on anatomy. He also revived the concept that function was dependent on structure.

What Vesalius did for anatomy William Harvey (1578-1657) did for physiology. He correctly described the circulation of blood. Before the 17th century the circulatory system was believed to be composed of 2 closed systems. The first, or "natural" circulation which contained venous blood and had its origin in the liver from which the blood continually ebbed and flowed for nourishment of the body. The second, or "vital" circulation, contained another kind of blood which flowed from the heart, distributing heat and life to all parts. The lungs functioned like bellows fanning and cooling the vital blood. Practically all teachers believed the only communication between these systems was through small pores in the wall separating the 2 sides of the heart as taught by Galen.

Harvey, in his book *De Motu Cordis*, demonstrated conclusively that blood moved in a circle. This marks the final emergence of the modern spirit. He demonstrated the return of the blood to the heart by way of the veins. He characterized the heart as a muscular pump and demonstrated the occurrence of systole and diastole. Harvey utilized the existence of the valves and their position in the great veins above and below the heart to deduce correctly they served to counteract the effect of gravity in the veins and to prevent a reflux from the heart.

Harvey's work excited violent opposition. Many physicians went to great pains to demonstrate inconsistencies. Others upheld his theory and proved its correctness by further studies.

By the 17th century certain objective features of disease were known. The art of careful observation had been cultivated, many empirical remedies had been discovered, the courser structure of human anatomy had been well worked out and inroads had been made in the knowledge of physiology. What disease was, where it was and how it was caused had not even begun to be discussed intelligently.

The Rise and Development of Modern Medicine

Giovanni B. Morgagni (1682-1771) created the science of pathological anatomy. His famous book, *On the Seats and Causes of Disease*, is the work of an anatomist and pathologist combining his special knowledge of the autopsy room with the bedside observations of the clinician. He systematically compiled what we now term clinicopathological correlations. His first step was a careful notation of the symptoms his patients exhibited. The second step took place at the autopsy table where he related the pathological findings to antemortem observations.

Morgagni reached the monumental conclusion disease was not generalized in origin but arose in organs, hence, localized in origin. Later Marie F.X. Bichat (1771-1802) ascribed the origin of disease to the level of tissue. Rudolph L.K. Virchow (1821-1902) extended the idea to the level of cells and today this is being explained on the molecular level.

Morgagni's work slowly stimulated the formation of schools of real clinical medicine with teachings based on examination of the patient rather than on the study of classical texts, metaphysical discussions and dogmatic statements. The master of clinical medicine in

(Continued next page)

the 17th century was Hermann Boerhaave (1668-1738). He studied disease as one of natures phenomenon. His aim was to cure. He felt all theoretical discussion should cease at the patient's bedside. Boerhaave's influence was felt through his pupils. He was extraordinarily popular, attracting many of the world's future great physicians as his students.

The new clinical medicine as taught in the spirit of Boerhaave was severly limited. Morgagni localized disease to the organs and Boerhaave brought us to the bedside, but through careful observation alone he could not detect which organs were diseased. Tools were needed; the first came at the hands of Leopold E. von Auenbrugger (1722-1809). In 1761 he published a tiny volume called *Inventum Novum*. His invention was percussion. It has been surmised he received the inspiration for his great discovery from his boyhood experiences in his father's Austrian inn, where he learned to estimate the amount of wine in the casks by thumping their sides. A muffled sound or one of higher pitch than usual indicated the presumable site of disease.

To the novice, percussion seemed crude and awkward. Auenbrugger once advised a colleague to recall his first kiss and how rapidly he improved with practice. Percussion proved premature as the anatomical conception of disease based on Morgagni's work took many years to permeate clinical medicine and was virtually ignored by the majority of contemporary physicians.

Stethoscope is Born

The importance of percussion was brought to light by Jean N. Corvisart (1755-1821). He happened upon a reference to percussion, used the method and was convinced of its value. Through his teaching, percussion came into widespread use. His fame spread and he became Napoleon's personal physician. His reputation attracted many gifted students. Chief among these was a young man named Rene T.H. Laennec (1781-1826) who invented the stethoscope.

The story of this invention has become a legend. One evening when Laennec came home after a long day on the wards, Mrs. Laennec waggled her finger and exclaimed, "This afternoon all the girls at the sewing circle were chattering about how you spend your day patting breasts and putting your ear to the bared bosoms of young maidens. I have never been so embarrassed in all my life." "My dear wife," responded Laennec, "I'm only carrying on the scientific pursuits of percussion and auscultation." "Pursuit is right," shrilled his spouse, "and you are going to have to stop. You are being too intimate with these patients." The poor doctor spent a troubled night. He then recalled a time when he saw some children who with their ears glued to 2 ends of some long piece of wood could hear the sound of little blows struck at the opposite end. Soon thereafter at his clinic at the Necker Hospital, he took a sheet of paper, rolled it up and tied it with a string making a central canal which he could place on a diseased chest. Not only did this ensure a more professional working position but yielded many new and subtle sounds. A wooden stethoscope was designed to replace his original roll of paper.

He described rales, bronchophony, pectoriloquy, egophony, reticular and bronchial breathing. He differentiated pulmonary tuberculosis, pulmonary abscess and gangrene, bronchiectasis, emphysema, pulmonary infarction and pneumothorax. He also made may contributions to cardiology.

Microscope Introduced

Clinical medicine fluorished during the 19th century. Physical diagnosis became entrenched and scientific truths were pursued in earnest. These were the days of Thomas Hodgkin, Richard Bright and Thomas Addison in London, Jean M. Charcot and Armand Trousseau of France, Robert Kock, Louis Pasteur and Paul Ehrlich on the continent and Daniel Drake and William Beaumont in America. It was the time of experimentation and Claude Bernard. It saw the introduction of the microscope in clincial work which widened our powers of diagnosis. It may be best remembered as the time of the germ theory with the rise of bacteriology.

During the mid 1800's we knew no more about the causes of the great plagues, fevers and pestilence than did the Greeks. Pasteur disproved forever the theory of spontaneous generation and his techniques were incorporated into an antiseptic technique championed by Lister and took the bugs out of surgery.

Kock demonstrated the constant presence of germs in the blood of animals dying from infectious diseases. He grew these organisms

in pure culture outside the body and produced the disease artificially by innoculating animals with cultured oganisms. Immunology was making great strides with the work of Elie Metchnikoff and Ehrlich. Their work with the previous experience of cowpox vaccination of Edward Jenner (1749-1823) opened the door to immunization.

Evolution in Medical Education

Medical education was going through its own revolution. Hundreds of medical schools sprang up overnight, particularly in America. It was not uncommon for medical students to be new high school graduates and a medical degree might be issued without the student ever having examined a patient. Establishment of the Johns Hopkins Hospital and Medical School in Baltimore created a wave of change. A college degree was required for admission and evidence of sound scholarship. Largely through the influence of William Osler (1849-1919), students were brought back to the wards. They were encouraged to learn at the bedside and to take clinical problems to the laboratory for investigation.

Conclusion

The 20th century has seen a bewildering acceleration of medical information and diagnostic techniques. It has become the domain of the specialist and the procedure. We have become very successful in curing previously fatal conditions and people are living longer.

The history of medicine reflects the contemporary understanding of the nature of disease at different periods.

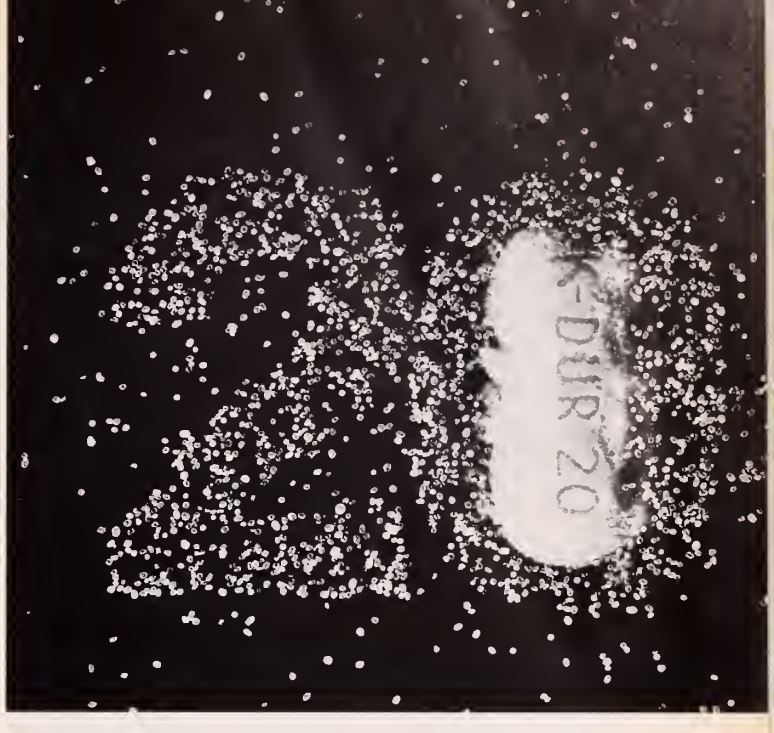
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INDICATIONS AND USAGE: BECAUSE OF REPORTS OF INTESTINAL AND GASTRIC ULCERATION AND BLEEDING WITH SLOW-RELEASE POTASSIUM CHLORIDE PREPARATIONS, THESE DRUGS SHOULD BE RESERVED FOR THOSE PATIENTS WHO CANNOT TOLERATE OR REFUSE TO TAKE LIQUID OR EFFERVESCENT POTASSIUM PREPARATIONS OR FOR PATIENTS IN WHOM THERE IS A PROBLEM OF COMPLIANCE WITH THESE PREPARATIONS.

1. For therapeutic use in patients with hypokalemia with or without metabolic alkalosis, in digitalis intoxication and in patients with hypokalemic familial periodic paralysis.

2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

The paper will be reviewed by the publications committee and a follow-up letter will be sent to the author, either accepting or rejecting the article.

All material is subject to editing by the staff copy editor to assure clarity and good grammar and to conform to *IOWA MEDICINE* style and format. The author will receive galley proof of the paper prior to publication to check for inaccuracies, but no rewriting may be done after the manuscript is set in galleys.

Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

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Marion E. Alberts, M.D.

The Editor Comments



Education of Medical Students

It would seem, Adeimantus, that the direction in which education starts a man will determine his future life.

— Plato (428-347 bc), *Republic*, iv.

There are many problems and difficulties in the education of a medical student, but they are not more difficult than the question of the continuous education of the general practitioner. . . . No class of men needs to call to mind more often the wise comment of Plato that education is a life-long business.

— Sir William Osler (1849-1919), *On the Educational Value of the Medical Society*

— the most gifted minds, when they are ill-educated, become preeminently bad.

— Plato, *Republic*

SOLID ADVANCES IN METHODS of teaching medicine have been a steady progression of tutorial and technologic innovations. Picture the students of Hippocrates, the itinerant Asclepiad, leaning on each of his words. Hippocrates' writings are largely his lectures and speeches recorded by his followers. His stature was so great that his contemporary, Plato, mentioned him, notably in his "Dialogues i," when Phaedrus declares, "Hippocrates, the Asclepiad, says that the nature even of the body can only be understood as a whole."

That declaration of the body as a whole is exemplified in our teachings of today. Our understanding of pathophysiology entwines the organ systems of the human body in a web of concern for the entire body; not just a single organ. Medical students today have at their disposal extensive laboratory techniques and computer assistance embelished by knowledge gleaned from the past. Rather than declarations based on myths, speculations and musings of various priests and cultists, present medicine is an amalgamation of art and science.

Osler, in another of his addresses, declared that a great advancement in the teaching of medicine came about when medical schools became part of universities. The academic atmosphere of the university setting, supported by the people, was to Osler a definite advantage in educating medical students. He believed the transition to the university setting of medicine revived a loyalty to higher ideals within the medical profession and a growing public appreciation of the value of physicians educated in modern methods. These remarks by Osler were made at the University of Minnesota in 1892. They are just as true today.

Each year at this time *IOWA MEDICINE* examines the status of the University of Iowa College of Medicine. The bulk of the editorial content emanates from the faculty of the University. The student-teacher relationships remain solid, but there are new attitudes which reflect our society. No longer are students subservient to their teachers on a 4-year pathway of fear and apprehension. I re-

(Continued next page)

call the admonishment given the first day of medical college that the second year class would be smaller by one-third. That prediction was true.

Osler suggested to students, whom he referred to as "Apprentices of the Guild," several dicta. First, he declared the need for the "art of detachment" whereby the student would detach himself from the pleasures of youth. He felt the discipline necessary to secure the art of medicine required self-control which formed a valuable introduction to life's stern realities.

Second, Osler declared the necessity of "virtue of method," or a life system. His admonition was that by the orderly arrangement of work there would be a gain over the spasmodically stimulated student who had to resort to cramming before examinations.

Third, Osler said the "quality of thoroughness" was an element of such importance that it could be subject of a separate essay. He felt the firm foundation in the fundamental sciences augered a better understanding and an increased knowledge of medicine. How true it is that modern medicine is so dependent on a firm foundation of the basic sciences.

Last, but not least, Osler's last dictum called for the "grace of humility." Physicians too often are overly sensitive to a suggestion a mistake has been made. Regardless of the source, it is regarded as a reflection on the physician's honor. Osler made a plea for less sensitivity in admitting errors, an increase in brotherly concern and admission of one's feelings. The young physician has a choice. The pathway to success and professional status is long and difficult. As the neophyte is directed, so may the goals of his direction be obtained.

The concern of our profession is continuing our noble pursuits in caring for the sick. The education of our successors is the responsibility of their teachers, whether they are in the formal training of the medical student or examples set by their colleagues. As the student finishes formal medical school training education continues by experience and the dedication of colleagues. The physicians who teach and their students face enormous challenges. Medicine is a great and noble profession; ours is a proud heritage. — *M.E.A.*

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Cost Accounting for Clinics

MEASURING THE COST OF providing health care is more important now than ever. HMOs and other payors are less inclined to pay published charges because they must negotiate discounts with clinics. To combat this trend, the clinic must understand cost at the procedure level. This information can help increase clinic profits.

Knowledge of cost at the test or procedure level has many uses. In dealing with HMOs and other payors, detailed knowledge of specific cost helps the clinic negotiate discounts but still enhance profitability.

Knowledge of cost can also be used to evaluate the performance of clinic managers. Managers can be accountable for controlling cost to levels within predetermined ranges.

Test or procedure cost can be combined to form cost by product line. Managers and owners can array product lines to review their relative profitability. Similar information can be obtained by arraying the procedures completed by each physician. Physicians can then focus on procedures which generate the most profit and attempt to streamline less profitable procedures.

Cost accounting can be used to set physician compensation. Many compensation plans are based on productivity, which essentially measures revenue. The missing piece has been the costs associated with revenue generated. Cost accounting can supply this information.

An approach involving relative value units has been found to generate accurate assignment of cost at the test or procedure level.

Ask department managers what resources are needed to do each test or procedure. Most procedures require time (salaries); materials (department supplies); outside fees for interpreting tests; and capital (depreciation/rental and maintenance of equipment).

Assign relative value units to each procedure which measure the resources required for the procedure. For example, time can be measured in units of 1 minute; materials can be assigned using the actual direct cost. Tests requiring interpretation by outside professionals can be assigned the actual fee. Equipment cost can be assigned to the procedures in relative units by establishing the unit (for example, $100) and applying multiples of this unit to the test or procedure.

Once the relative value units have been assigned, sum the total relative value units (multiply assigned relative value units by the procedure count). The total relative value units is divided into the cost. The resulting cost per relative value unit is then applied to the relative value units assigned to each procedure. Add other direct costs which can be assigned to each procedure using one or more of the relative value units as the basis.

Overhead type cost, administration, fringe benefits, interest, etc. which cannot be directly assigned can be allocated first to the applicable department and then to each test or procedure. Application of overhead cost to the departments can be accomplished using a step-down process. This involves setting up statistics on a departmental basis and allocating cost using these statistics. Departmental overhead can be applied to tests and procedures by using one or a combination of the relative value units as the basis.

This article was authored by Bernie Hesse, a health care partner with McGladrey & Pullen, Des Moines.

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Brief Summary

Consult the package literature for complete information.

Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* – 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests – False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions – No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility – A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy – Teratogenic Effects – Pregnancy Category C – Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers – Studies conducted in lactating women have shown that < 0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use – Safety and effectiveness in children have not been established.

Use in Elderly Patients – Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic – Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular – In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS – Rare cases of reversible mental confusion have been reported.

Endocrine – Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic – Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental – Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity – As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other – Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms – There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment – To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

Drugs in Pregnancy

CAUTION WITH REGARD TO drug ingestion during pregnancy is recommended. The term "placental barrier" is a contradiction as it allows crossing of many drugs and dietary substances.

There is a marked species specificity in drug teratogenicity. For example, thalidomide was not found to be teratogenic in lower species, but is a potent human teratogen. In certain strains of mice, corticosteroids produce a high percentage of offspring with cleft lip ± palate, although no studies have shown these drugs to be teratogenic in humans.

F.D.A. Categories

The Food and Drug Administration lists 5 categories of labeling for drug use in pregnancy:

- Controlled studies in women fail to demonstrate a risk to the fetus in the first trimester and the possibility of fetal harm appears remote.
- Animal studies do not indicate a risk to the fetus and there are no controlled human or animal studies to show an adverse effect on the fetus; but studies in pregnant women have failed to demonstrate a risk to the fetus.
- Studies have shown the drug to have animal teratogenic or embryocidal effects, but there are no controlled studies in women or no studies available in animals or women.
- Positive evidence of human fetal risk exists, but benefits in certain situations (e.g. life-threatening situations or serious diseases for which safer drugs cannot be used or are ineffective) may make use of the drug acceptable despite risks.
- Studies in animals or humans have demonstrated fetal abnormalities or there is evidence of fetal risk based on human experience and the risk clearly outweighs any possible benefit.

The classic teratogenic risk period is from about day 31 after the last menstrual period in a 28 day cycle, to 71 days from the last period. This is the critical period of organogenesis and teratogens may cause malformations which are usually recognized at birth. Administration of drugs early in this period will affect the developing organs such as the heart or neural tube. Closer to the end of this teratogenic period, the ear and palate are forming and may be affected by a teratogen. If not urgently needed, drug therapy should be postponed until after this critical period of organ development has been completed.

Before the period of organogenesis, exposure to a teratogen usually causes an all or none effect. With exposure to conception, the conceptus either does not survive or survives without anomalies. In someone exposed to a teratogen who may be pregnant, sensitive serum pregnancy tests can diagnose pregnancy as early as a week after conception. If there is any question with regard to possible pregnancy, these tests should be employed.

While the risk of teratogenesis may be less after the first trimester, fetal development continues in the second and third trimesters. Some anomalies of the uterus from DES exposure have been shown to occur in the second trimester and were not recognized until after puberty. The brain continues to develop through pregnancy and in the neonatal periods. As a result, fetal alcohol syndrome may occur with chronic exposure to alcohol in later

(Continued next page)

This article was authored by Jennifer R. Niebyl, M.D., Professor and Head, Department of Obstetrics and Gynecology, University of Iowa Hospitals and Clinics. It was edited by John Kasik, M.D.

stages of pregnancy. Thus, drugs may affect the fetus in later pregnancy as well, although the effects may not be recognized until later.

Vitamin A Derivatives

Isotretinoin (Accutane) — Isotretinoin was marketed as FDA Category X. Of 154 exposed human pregnancies to date, there have been 21 reported cases of birth defects, 12 spontaneous abortions, 95 elective abortions and 26 normal infants in women taking isotretinoin during early pregnancy. The actual risk of anomalies in patients studied prospectively was 14%. The malformed infants had a characteristic pattern of craniofacial, cardiac, thymic and central nervous system anomalies.[1]

Isotretinoin is not stored in tissue and an exposure before pregnancy should not be a risk as the drug would not be detectable in serum 5 days after ingestion.

Etretinate (Tegison) — This drug is used for psoriasis and may well have a teratogenic risk similar to isotretinoin.[1] Case reports of malformations have appeared but the absolute risk is unknown. The half-life of several months makes levels cumulative and the drug carries a warning to avoid pregnancy within 6 months of use.

Vitamin A — There is no evidence vitamin A itself in normal doses is teratogenic. The levels in prenatal vitamins (~5,000 IU orally daily) have not been associated with any risk, nor the lower doses used with topical acne preparations (Retin-A). Large doses of vitamin A (25,000 IU daily or greater) should be discouraged during pregnancy due to the possible similarity to isotretinoin and etretinate. Eighteen cases of birth defects have been reported after exposure to levels of 25,000 IU of vitamin A or greater during pregnancy.

Anticonvulsants

Epileptic women taking anticonvulsants during pregnancy have approximately doubled the general population risk of malformations.[2] The general risk is 2% to 3%, in epileptic women on anticonvulsants the risk of major malformations is about 5%, especially cleft lip with or without cleft palate and congenital heart disease. It has recently been recognized valproic acid carries approximately a 1% risk of neural tube defects and possibly other defects.[3] Alpha fetoprotein screening is appropriate for these patients.

Whenever a drug is claimed to be a teratogen, one always can raise the issue of whether the disease for which the drug was prescribed in some way contributed to the defect. Women with a convulsive disorder have an increased risk of birth defects even when they take no anticonvulsant drug.

Possible causes of malformations in epileptic women on anticonvulsants include the disease itself, genetic predisposition to epilepsy and malformations, genetic differences in drug metabolism, the specific drugs themselves and deficiency states induced by drugs such as decreased serum folate. A combination of more than 3 drugs or a high daily dose increases the chance of malformations.[4]

Less than 10% of offspring show the fetal hydantoin syndrome. This consists of microcephaly, growth deficiency, developmental delays, mental retardation and dysmorphic craniofacial features.

Most authorities agree the benefits of anticonvulsant therapy during pregnancy outweigh the risks of discontinuation of the drug if the patient is first seen during pregnancy. The blood level of drug should be monitored to assure a therapeutic level but minimize dosage.

Anticoagulants

The warfarin embryopathy includes nasal hypoplasia and bone stippling on x-ray and may include ophthalmologic abnormalities such as bilateral optic atrophy and mental retardation. These abnormalities are presumably caused by microhemorrhages during development. Even with use only beyond the first trimester, ophthalmologic abnormalities and mental retardation may occur. The alternative drug, heparin, does not cross the placenta and should be the drug of choice for patients requiring anticoagulation during pregnancy.

In patients with cardiac valve prostheses, full anticoagulation is necessary, as low dose heparin resulted in 3 valve thromboses (2 fatal) in 35 mothers.[5]

Lithium

In the International Register of Lithium Babies, 217 infants had been exposed at least during the first trimester of pregnancy and 25 (11.5%) were malformed.[6] Eighteen had cardiovascular anomalies, including 6 cases of the rare Ebstein's anomaly. Thus, it is usually rec-

ommended that drug therapy be changed in pregnant women on lithium to avoid fetal drug exposure.

Tranquilizers

Conflicting reports of the possible teratogenicity of the various tranquilizers have appeared, including meprobamate (Miltown) and chlordiazepoxide (Librium). In prospective studies no teratogenicity has been noted.[7] A fetal benzodiazepine syndrome has been reported in 7 infants of 36 mothers who regularly took benzodiazepines during pregnancy.[8] There was growth retardation, dysmorphism and central nervous system dysfunction in these infants. In most clinical situations, the risk-benefit ratio does not justify the use of benzodiazepines in pregnancy.

Antihistamines and Decongestants

Patients need to be educated that these drugs represent symptomatic therapy for the common cold and have no influence on the course of the disease. Other remedies should be recommended such as humidifiers, rest and fluids. If medications are necessary, combinations of several drugs should not be used if only one drug is necessary. If the situation is an allergy, an antihistamine alone will suffice. If decongestion is necessary, topical nasal sprays will result in a lower dose to the fetus. Although there is no known teratogenicity of these drugs, use of over the counter drugs for trivial indications should be discouraged as long term effects, especially of chronic use, are unknown.

Analgesics

Aspirin — There is no evidence of any teratogenic effect of aspirin taken in the first trimester in human beings. However, aspirin does have significant perinatal effects as it inhibits prostaglandin synthesis. Uterine contractility is decreased and patients taking aspirin have delayed onset of labor, longer duration of labor and an increased risk of prolonged pregnancy.

Aspirin also causes decreased platelet aggregation which contributes to risk of antepartum bleeding and bleeding at delivery. Platelet dysfunction has been described in newborns 5 days after ingestion of aspirin by the mother.[9]

Low dose aspirin may prove of benefit in prevention of preeclampsia, or fetal wastage associated with autoimmune diseases. Wallenburg randomized patients to low dose aspirin therapy who had positive angiotensin II infusion tests and reduced the incidence of preeclampsia in the treated compared to the placebo group.[10] Lubbe, et al. treated patients with lupus anticoagulant and fetal wastage with prednisone 40-60 mg/day and low dose aspirin (75 mg/day) with improved fetal outcome.

Acetaminophen — Acetaminophen (Tylenol, Datril) has shown no evidence of teratogenicity. The bleeding time is not prolonged in pregnant patients taking acetaminophen in contrast to aspirin and the drug is not toxic to the newborn. Thus, if a mild analgesic or antipyretic is indicated, acetaminophen is preferred over aspirin during pregnancy. The absorption and disposition of acetaminophen in normal doses is not altered by pregnancy.

Propoxyphene (Darvon) — Propoxyphene is an acceptable alternative mild analgesic with no known teratogenicity. However, it should not be used for trivial indications as it is potentially addictive.

Codeine — In the Collaborative Perinatal Project, no increased relative risk of malformations was observed in 563 codeine users. Codeine can cause addiction and newborn withdrawal symptoms if used to excess in the perinatal period.

Antibiotics and Anti-infective Agents

As pregnant patients are particularly suspectible to vaginal yeast infections, antibiotics should be used only when clearly indicated.

Penicillins and Sulfonamides — Penicillin derivatives including penicillin and ampicillin are apparently safe in pregnancy as are erythromycin and the cephalosporins. Sulfonamides have not been associated with any risk except when given to premature infants when they compete with bilirubin for albumin-binding sites and contribute to increased risk of hyperbilirubinemia in the newborn.

Tetracyclines — In 341 infants exposed to tetracycline in the first trimester, no teratogenic effect was observed.[12] However, the tetracyclines bind to developing enamel to cause discoloration of the teeth. The drug affects de-

(Continued next page)

ciduous teeth between approximately 26 weeks of pregnancy and 6 months of age in the infant, but only affects permanent teeth if given in childhood approximately 6 months of age to 5 years. In addition, the tetracyclines deposit in developing osseous sites and cause an inhibition of bone growth, so alternate drugs are recommended in pregnancy.

Nitrofurantoin, Macrodantin — No risk of birth defects has been noted with exposure to this drug. It can induce hemolytic anemia in G6PD deficient patients. Since the newborn's red cells are deficient in reduced glutathione, the label carries a warning against use of the drug at term.

'Low dose aspirin may prove of benefit in prevention of pre-eclampsia, or fetal wastage associated with autoimmune diseases.'

Aminoglycosides — Of 135 infants exposed to streptomycin in the first trimester, no teratogenic effects were observed.[12] Transplacental passage has been demonstrated and a rate of ototoxicity of 3%-11% in children of mothers who received prolonged streptomycin treatment for tuberculosis during pregnancy has been reported. Although the hearing loss appears to be dose-related and has not been reported with other aminoglycosides, these agents should be used only if necessary during pregnancy.

Other Antituberculosis Drugs — There is no evidence of any teratogenic effect of INH, PAS, rifampin or ethambutol. In one report, ethionamide was associated with central nervous system anomalies.

Antiasthmatics

Theophylline and Aminophylline — These drugs are safe to use for treating asthma in pregnancy and no evidence of teratogenic risk has been found.

Terbutaline (Brethine) — This has been widely used in treatment of preterm labor. It is more rapid in onset and has a longer duration of action then epinephrine and is often preferred for asthma in the pregnant patient. No risk of birth defects has been reported. Long term use has been associated with an increased risk of glucose intolerance.[13]

Cromolyn Sodium — This drug may be administered in pregnancy and systemic absorption is minimal. Teratogenicity has not been reported in humans.

Isoproterenol (Isuprel) and Metaproterenol — When these drugs are given as topical aerosols in the treatment of asthma, the total dose absorbed is usually not significant. However, cardiovascular effects of oral or intravenous doses may cause decreased uterine blood flow. No teratogenicity has been reported.

Corticosteroids — All steroids cross the placenta to some degree. When prednisone or prednisolone are maternally administered, the concentration of active compound in the fetus is less than 10% of that in the mother and therefore these are the drugs of choice for treating medical diseases such as asthma. When corticosteroid effect such as lung maturity is desired in the infant, betamethasone and dexamethasone are preferred as these are minimally inactivated by the placenta. There is no evidence corticosteroids are teratogenic in humans.

Iodide — Iodide such as found in a saturated solution of potassium iodide expectorant (SSKI) crosses the placenta and may cause a very large fetal goiter, enough to produce respiratory obstruction in the newborn. Before a patient is advised to take cough medicine, one should be sure it does not contain iodide.

Cardiovascular Drugs

Digoxin — No teratogenicity of digoxin has been noted. Blood levels should be monitored in pregnancy to assure adequate therapeutic levels. Digoxin-like immunoreactive substances may be mistaken in assays for fetal concentrations of digoxin. In one study of fetuses with cardiac anomalies there was no difference in the immunoreactive digoxin levels whether or not the mother had received digoxin.[14]

Antihypertensive Drugs — Alphamethyldopa (Aldomet) has been widely used for treatment of chronic hypertension in pregnancy. Although postural hypotension may occur, no unusual fetal effects have been noted. Hydralazine (Apresoline) may be used in pregnancy but is usually reserved for treatment of severe preeclampsia.

Several studies suggest improved outcome with the use of atenolol or propranolol to treat chronic hypertension during pregnancy and no evidence of teratogenicity has been noted.

Drugs for Ovulation Induction

In over 2,000 exposures, no evidence of teratogenic risk for clomiphene has been noted and the percentage of spontaneous abortions is close to the expected rate.[15]

Infants are often exposed to bromocriptine in early pregnancy. No teratogenic effects have been observed in over 1,400 exposed pregnancies.

Conclusion

Many medical conditions are best treated initially with nonpharmacologic remedies. When a drug is used in pregnancy the risk/benefit ratio should justify the drug use. Therapy should be postponed if possible until after the first trimester.

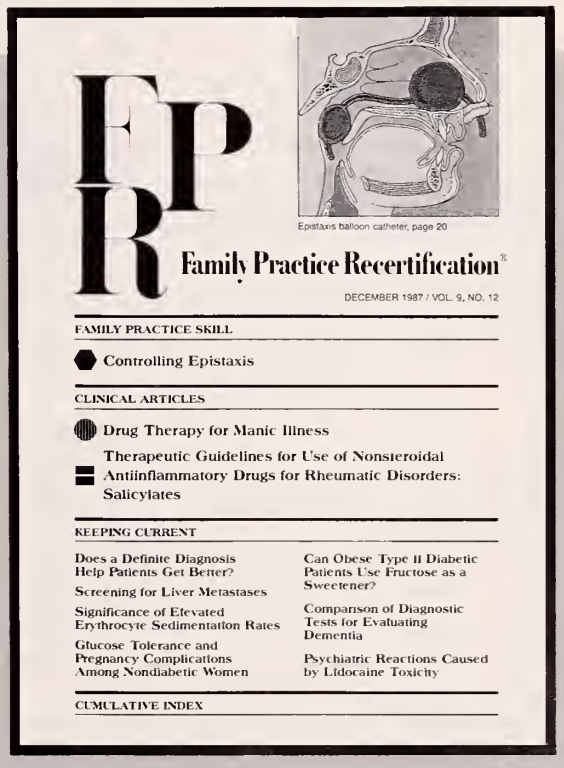
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Working Together

THE IOWA DEPARTMENT OF PUBLIC HEALTH and the University of Iowa have a history of working cooperatively. Various public health activities allow both to contribute their special capabilities to the most efficient delivery of service to Iowans. The exact programs involved and specific arrangements vary. Following are major programs or projects currently coordinated between the Department and the University.

Child Health Specialty Clinics (CHSC) — The largest single contracted program is the Child Health Specialty Clinics (originally called State Services for Crippled Children). CHSC is now included as a part of the federal Maternal and Child Health Block Grant. The program provides for evaluation and treatment of children and youth with known or suspected chronic health problems. University faculty and staff in audiology, cardiology, otolaryngology, orthopedics, pediatrics, physical therapy, psychology, speech/language pathology and other disciplines provide clinical services in more than 20 communities throughout the state.

A state appropriation through the Department helps support regional child health programs which offer Integrated Evaluation and Planning Clinics (IEPCs), a coordinated community medical/educational/social services approach to problems of childhood growth and development, learning and communication. They are conducted as interagency programs with Area Education Agencies and the Department of Human Services.

Muscle Disorders Clinics — A state appropriation to the Department supports special clinics at several sites for families with muscular dystrophy or related disorders.

Regional Genetic Consultation — The regional genetic counseling service offers statewide, in-depth counseling and follow-up for Iowans with birth defects, genetic or congenital disorders. Clinics are held at 12 sites throughout Iowa staffed by geneticists from the University. Genetic consultants from the Department arrange the clinics, gather advance case information for the clinics, assist at the clinics and do follow-up. Education presentations for health care providers and the general public are also a part of this program.

Birth Defects Registry — State funds allowed Iowa to initiate a birth defects registry for 9 central Iowa counties. Because of Iowa's commitment, the University was able to attract a federal grant to extend the activity to the remainder of the state. Hospital records are abstracted to collect standardized, reliable data for the registry.

Newborn Screening — Newborns in Iowa are screened for hypothyroidism, phenylketonuria (PKU), galactosemia, branched chain ketoacidemia (MSUD) and hemoglobin disorders. The University Hygienic Laboratory is the central laboratory for this program. Prompt testing, immediate telephone notification to physicians of presumptive positive results, consultation and educational presentations are included as part of this self-supporting program. The Department of Pediatrics assists with this program.

Metabolic Management Clinics — State funds also support a specialized clinic for families whose members have metabolic disorders such as PKU, Galactosemia and MSUD.

MSAFP Testing — Maternal Serum Alpha-Fetoprotein screening is available on a voluntary basis to women at 15 to 18 weeks of pregnancy. The University Hygienic Laboratory is the central laboratory for this program

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

and the Department of Obstetrics/Gynecology provides consultation and follow-up.

Perinatal Services — The Iowa Statewide Perinatal Care Program is entering its 17th year of operation. The perinatal team, which consists of an obstetric nurse, a neonatal care nurse, a maternal/fetal medicine specialist and a neonatologist, visits Iowa hospitals. Charts are reviewed and formal and informal education sessions are offered to physicians and nurses. Statewide and regional education sessions are offered for health care professionals. Educational materials are distributed. The team members have been vital participants in the Perinatal Standards Advisory Committee. This committee, composed of representatives of the Academy of Family Physicians, Academy of Pediatrics, College of OB/GYN, Medical Society, Osteopathic Medical Association, Nurses' Association and Hospital Association, established and periodically update standards for level I, II and III Perinatal Centers.

Maternal Health Clinics — Residents in OB/GYN help staff maternal health clinics for the Department in eastern Iowa.

Dental — The Department provides Maternal and Child Health Block Grant funds to the College of Dentistry for a program of dental care for persons with disabilities. The care is provided by University staff or by arrangement with selected dentists in 11 locations across Iowa. Dental hygiene students gain field experience as they assist the Department's dental hygienists in the school fluoride mouthrinse program.

Laboratory Services — The University Hygienic Laboratory is by law Iowa's public health laboratory. In addition to those services mentioned elsewhere in this article, the laboratory performs many services for the Department and for local health departments. These include major activities in sexually transmitted disease control such as HIV and GC testing, testing for numerous other communicable diseases, private well-water analysis and fluoride analysis.

Toxic Substance Assessment — The Department has an agreement with the federal Agency for Toxic Substances and Disease Registry to do health assessments of superfund sites and provide consultation at the time of toxic substance incidents. The University staff has been very helpful to the Department in developing the capacity to complete these functions. In addition, the Department will be sponsoring a conference on toxic substance accident intervention in Des Moines on May 2-3, 1989. The University, a cosponsor, will participate in this conference.

Radiation Incidents — The Department has primary responsibility for risk assessment and advising the governor and the Disaster Services Division regarding protective action decisions for radiation incidents at nuclear power plants or other sites. University Hygienic Lab staff are an important part of the field teams which gather samples and survey data.

LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

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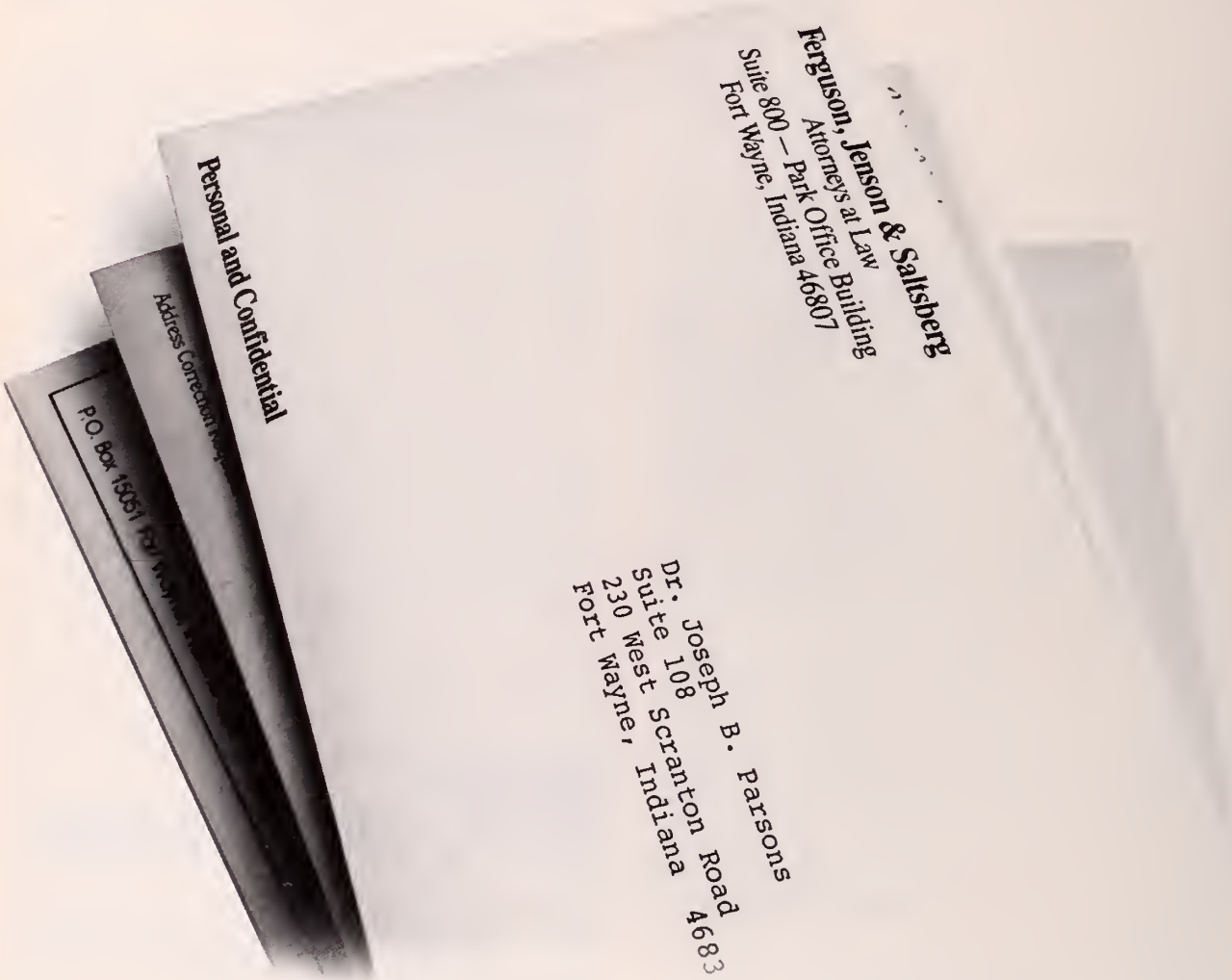
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U. of I. College of Medicine

RESEARCH INTO THE HORMONE that regulates reproduction has brought Mexico's most prestigious science award to **P. Michael Conn, Pharmacology.** Conn received the award from the Miguel Aleman Foundation for his work with gonadotropin releasing hormone (GnRH), a substance produced in the brain that regulates reproduction. The annual award was established in 1986 to further scientific investigation in Mexico by bringing in internationally known scientists. The foundation was established in the name of former Mexico President Miguel Aleman who is credited with encouraging scientific research and with the establishment of Mexico's national institute of health.

A NEW TEST TO ANALYZE VIBRATION WHITE FINGER (VWF) DISEASE in workers who operate vibratory tools such as chain saws, rock drills and air hammer chipping tools has been developed by UI College of Medicine orthopaedic researchers. VWF symptoms are usually provoked by coldness and reduced circulation to the fingers. In the study, blood flow rate in the digital artery of the long finger was measured before and immediately after 11 experienced air hammer operators, some of whom had VWF, used the tool, says ***Thomas Brown, Orthopaedic Surgery.*** *Nine novice and non-chippers served as a control group. Researchers observed for the first time that blood flow temporarily but dramatically increased immediately after chipping in subjects with severe VWF. The finding is surprising, Brown says, because long-term vibratory tool use can cause hypertrophy of muscle and blood vessel walls in the hand and fingers, and the extra muscle mass can close vessels down.*

THE UI COLLEGE OF MEDICINE EDUCATIONAL OPPORTUNITIES PROGRAM (EOP) is the winner of an Affirmative Action award for its exceptional minority recruitment efforts. Goals of the Affirmative Action Committee include the development of cultural, racial and ethnic diversity, and the recognition and encouragement of outstanding affirmative action within the UI. The 20-year-old EOP provides financial and academic assistance as needed for educationally and/or economically disadvantaged students entering the College of Medicine, targeting Black Americans, Puerto Ricans, Mexican Americans and Native Americans. On behalf of the UI Committee on Affirmative Action, UI President Hunter Rawlings III presented **College of Medicine Dean John W. Eckstein** with the award in February.

THE EFFECTS OF DIET ON HYPERTENSION in people over age 50 is the focus of a study by ***Ross Feldman, Internal Medicine and Pharmacology.*** *Feldman will study how blood vessels dilate in response to hormones related to the participant's diet. He'll examine the effects of both low and high sodium diets.*

HER RESEARCH IN UTERINE BLOOD FLOW and catechol estrogens has earned **Dianna E. Van Orden, Obstetrics and Gynecology,** the distinguished Method to Extend Research in Time (MERIT) award from the National Institute of Child Health and Human Development. The MERIT award will provide stable financial support for Van Orden's research for at least 5 years.

RENOWNED FOR HIS WORK WITH BRAIN CELLS affected by Alzheimer's disease, ***Gary Van Hoesen, Anatomy and Neurology,*** *has been awarded the Senator Jacob K. Javits Award in the Neurosciences. He'll receive research support totaling nearly $1 million over the next 7 years under the award established by Congress in honor of the former Republican senator from New York. Javits, who died from Lou Gehrig's disease, had championed research support for a wide range of disorders involving the brain and central nervous system. Van Hoesen is examining the pathology of the cerebral cortex of the brain in patients who had Alz-*

(Continued next page)

This material is furnished by The University of Iowa Health News Service.

heimer's disease. "We are primarily interested in correlating the lesions that occur on the brain with specific changes in behavior," he says.

IOWA'S 1985 SWITCH TO PRIVATE RETAIL SALES of wine has not significantly increased wine consumption or the prevalence of heavy and problem drinkers, according to a UI study. Alcohol sales data before and after the change to private sales were examined and Iowa drinkers were also surveyed about how much wine they drank and purchased 4 months before and 9 months after the change, says the study's principal investigator, **Harold Mulford, Psychiatry.** Data show wine sales surged in July 1985, the first month table wine was sold through private outlets, and remained at a higher level for several months. In 1987 the sale of wine declined to levels similar to those prior to the change to private outlets. Mulford believes the sales increase must be discounted because "initial high wine sales levels reflect inventory stocking by new merchants," and "state stores were liquidating their wine inventories and new merchants were promoting their new products."

FOUR UNIVERSITY FACULTY MEMBERS HAVE DIED. Robert C. Hardin, Internal Medicine, *died on January 2, 1988 at the age of 74. The Buffalo Center native was dean emeritus of the College of Medicine and a former vice president for health affairs. Hardin was an authority on diabetes and blood collection, preservation and transfusion and helped establish a national blood program. The UI Health Sciences Library has been renamed in his honor.* ***Paul E. Huston,*** *head of the UI psychiatry department from 1955-1971, died November 21, 1988 at the age of 85. Huston, one of the founders of the Iowa Psychiatric Society, extended his service to the state through leadership on several governor's commissions on mental health and penal affairs.* ***Placidus Joseph Leinfelder*** *died on November 9, 1988 at the age of 83. The professor emeritus of ophthalmology was described as having "a lifelong commitment to teaching." Leinfelder was particularly interested in neuro-ophthalomology and the effect of radiation on the eye, which led him to be appointed to the advisory committee to the Atomic Bomb Casualty Commission in Hiroshima, Japan.* ***William B. Bean,*** *emeritus professor and head of the department of internal medicine, died March 1, 1989 at age 79. Bean was also physician-in-chief of the UI General Hospital from 1948-1970. He was internationally known as a writer and editor of medical literature.*

THE GENE RESPONSIBLE FOR CHARCOT-MARIE-TOOTH (CMT) disease-type 2 is linked to DNA markers mapped on chromosome X, **Victor Ionasescu, Pediatrics,** and colleagues have shown. The UI research team is now one step closer to discovering the gene responsible for CMT-type 2. They studied 15 members in 4 generations of a Dubuque family who were affected. Since the study was completed, they were able to diagnose another family with CMT-type 2 in Des Moines. This form of CMT can be inherited from either parent, but fathers with the disorder can only pass it on to daughters, whereas mothers with the disease can pass the gene on to both their sons and daughters. Males are more severely affected than females.

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Medical News/Products and Programs

ROCHE TO MARKET ROFERON®-A FOR TREATMENT OF AIDS-RELATED CANCER — The U.S. Food and Drug Administration (FDA) has granted Hoffmann-La Roche, Inc. a license to market its Roferon®-A brand of recombinant human alfa interferon for treatment of an AIDS-related cancer in patients 18 years of age and older. Clinical studies have shown that in a select group of patients with AIDS-related KS, whose immune systems had not been greatly suppressed by the AIDS virus, Roferon®-A yielded a 45% response rate. Those who responded to Roferon®-A therapy experienced both tumor regression and prolongation of survival.

Treatment with Roferon®-A consists of once-daily injections for 10 to 12 weeks, followed by maintenance injections 3 times a week. Hospitalization is not required, since Roferon®-A is supplied in a ready-to-inject intramuscular or subcutaneous solution and may be given on an outpatient basis or self-administered at home. Responding patients should continue treatment until all evidence of active tumor disappears, or until the severity of adverse effects or opportunistic infection requires discontinuation. The optimum duration of therapy has not been determined. Complete prescribing information for Roferon®-A, including adverse effects, is printed on the package insert enclosed with the product.

AIDS LIBRARY ON COMPACT DISC — A comprehensive medical library of AIDS literature on CD-ROM is now available from The Medical Publishing Group of the Massachusetts Medical Society. This unique, innovative product provides the full text of original journal articles, textbook and bibliographic data on all aspects of AIDS, fully linked and integrated into one up-to-date source of information. Compact Library: AIDS *meets the needs of all professionals requiring immediate, accurate AIDS information.*

Compact Library: AIDS *will be sold on an annual subscription basis, thus providing unlimited access at a fixed cost. Subscribers will automatically receive a new, updated disc every 3 months, ensuring the currency and timeliness of this electronic AIDS library.* Compact Library: AIDS *works with most IBM personal computers and compatibles, so there are no phone lines, modems, on-line charges or transmission problems.*

The annual subscription price, $875, includes quarterly updates. For more information contact The Medical Publishing Group, 1440 Main Street, Waltham, Massachusetts 02154, phone 617/893-3800.

MAROGEN STERILE POWDER — Chugai-Upjohn Inc. announced that it and Chugai Pharmaceutical Co., Ltd., had applied to the U.S. Food and Drug Administration (FDA) for clearance to market Marogen Sterile Power (erythropoietin) for the treatment of anemia secondary to end-stage renal disease. Marogen Sterile Powder contains erythropoietin produced by recombinant DNA techniques developed by Genetics Institute, Cambridge, Massachusetts. Erythropoietin is a glycoprotein hormone that is naturally secreted by healthy kidneys and stimulates the bone marrow to produce red blood cells. In end-stage renal disease, damaged to the kidneys often inhibits their ability to produce erythropoietin. This contributes to the development of anemia that can necessitate blood transfusions.

Marogen is manufactured by Chugai Pharmaceuticals Co., Ltd., Tokyo, licensed from Genetics Institute. G.H. Besselaar Associates, Princeton, New Jersey, conducted the U.S. clinical trials and compiled the filing under the auspices of Chugai and Chugai-Upjohn. The Upjohn Company will be the distributor for Marogen in the United States.

***CARDIAC REHABILITATION** — The American College of Physicians (ACP) recently recommended medically supervised physical exercise for certain patients recovering from heart attacks or heart surgery. The recommendation, developed by ACP's Clinical Efficacy Assessment Project (CEAP), identifies patients at low, intermediate and high risk for*

(Continued next page)

future cardiac problems and suggests appropriate levels of rehabilitation for each category. Electrocardiographic (ECG) monitoring and intensive supervision during exercise are recommended for high-risk patients. However, formal rehabilitation programs were found to be unnecessary for most patients who suffered uncomplicated heart attacks, according to ACP. Cardiac rehabilitation should be tailored to each patient's needs, with the use of teaching, counseling and exercise programs determined on an individual basis by physicians, ACP stated. The recommendation was published October 15, 1988 in Annals of Internal Medicine.

PREVENTION AND TREATMENT OF KIDNEY STONES — Earlier this year, the National Institutes of Diabetes and Digestive and Kidney Diseases and the Office of Medical Applications of Research of the National Institutes of Health (NIH) held a Consensus Development Conference on Prevention and Treatment of Kidney Stones. After hearing presentation on the subject by scientific experts, a consensus panel issued a report containing conclusions and recommendations concerning the prevention and treatment of kidney stones. Free, single copies of the consensus statement on the prevention and treatment of kidney stones may be obtained from Michael J. Bernstein, Office of Medical Applications of Research, National Institutes of Health, Building 1, Room 216, Bethesda, Maryland 20892.

ACP RECOMMENDS ULTRASOUND FOR GALLBLADDER EVALUATION — *Ultrasound is the preferred initial test to detect gallbladder disease, according to "How to Study the Gallbladder," an American College of Physicians (ACP) recommendation published November 1 in* Annals of Internal Medicine. *Developed by ACP's Clinical Efficacy Assessment Project (CEAP), the recommendation states that in most cases physicians should first use ultrasound — sound waves that form 2-dimensional images of internal body organs — to test for both acute and chronic gallbladder inflammation. ACP recommends ultrasound because the diagnostic technique is highly accurate in detecting gallbladder disease. Ultrasound can be performed more rapidly and at lower cost to the patient than other imaging tests and is safer since it does not expose the patient to radiation, according to ACP.*

HEALTH BENEFITS OF ORAL CONTRACEPTIVES — Ortho Pharmaceutical Corporation announced revised oral contraceptive product labeling that includes the non-contraceptive health benefits of the Pill. The company also announced Ortho's 1988 Annual Birth Control Study has found the Pill to be the most popular method of birth control in the U.S., surpassing sterilization for the first time in 10 years. The labeling revisions, which will be included in Ortho Novum 7/7/7 packaging for patients and physicians, were requested by the FDA and reflect the growing body of scientific evidence that the Pill's benefits to women extend beyond birth control. For the first time, oral contraceptive labeling will state the Pill is related to decreased incidences of cancers of both the ovary (ovarian cancer) and lining of the uterus (endometrial cancer), functional ovarian cysts, ectopic pregnancies, acute pelvic inflammatory disease, menstrual pain, menstrual blood loss and iron deficiency anemia. The Pill's menstrual cycle regulating benefits will also be noted.

Recent Books

Riordan, Hugh Desaix, 1988, *Medical Mavericks,* volume 1, Biocommunications Press, Wichita, Kansas, paperback $7.95. This is the first volume of a planned trilogy. These are short vignettes of various pioneers in the field of medicine. Anecdotes of personal experiences of some of the subjects are amusing, while other tales give insight to the trials others had in their chosen endeavors. Written for casual reading, this volume is not extensive in coverage of historical data (18 "mavericks" are discussed in 88 pages), but an extensive bibliography and footnotes are provided.

Orbach, Israel, 1988, *Children Who Don't Want to Live,* Jossey-Bass, Inc., San Francisco, California. The author, a clinical psychologist at the Albert Einstein School of Medicine, Yeshiva University, draws upon his clinical experiences as a basis for this important work. To those experiences he formulates his theories toward a better understanding of childhood suicide and self-destructive behavior. His discussions of what children know and feel about death are most interesting.

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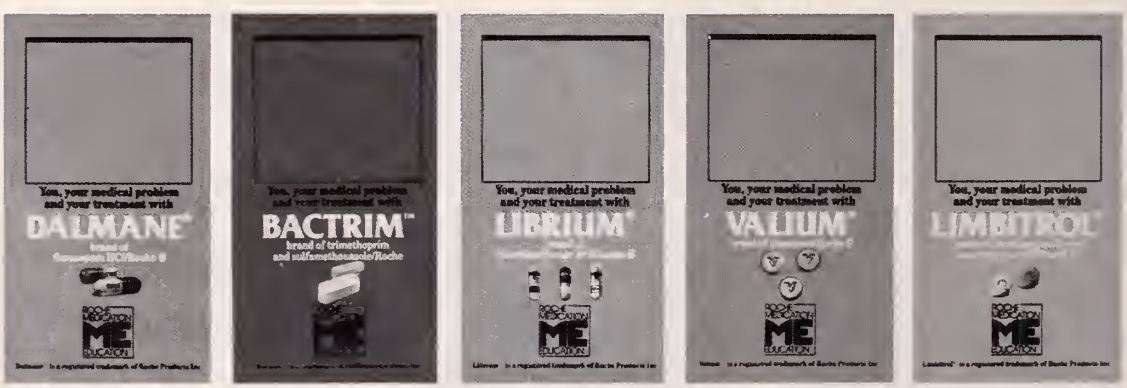
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About Iowa Physicians

Dr. Dwight G. Sattler, Kalona family practitioner and long-time team physician for the Mid-Prairie football and basketball teams, recently received the team doctor award from the Iowa High School Athletic Association. **Dr. Kevin Crowley** and **Dr. Gary DeVoss** of Cogley Medical Associates in Council Bluffs have been certified as diplomates in geriatric medicine. **Dr. Tareq Khatib** has closed his medical practice in Dyersville after 12 years of service to the Dyersville area and St. Mary's Hospital. **Dr. Gene N. Herbek,** Sioux City, has been elected president of the Woodbury County Medical Society. Other officers are **Dr. Thomas E. Hepperlen,** president-elect; **Dr. James M. Duggan,** secretary; **Dr. Gary R. Carlton,** treasurer; and **Drs. Michael J. Jung, John N. Redwine, Kathryn D. Opheim, James W. Roat, Daryl C. Rife** and **Richard D. Hildebrand,** trustees. OB-GYN Specialists, P.C. has opened in Waterloo with the merger of the former practices of Waterloo **Drs. Lawrence Betts, Douglas Stanford, Stephen Bloom, Robert Hedican** and **Marilyn Hines. Dr. Charles D. Jons,** Ames, has been elected to the board of directors of the American Medical Peer Review Organization.

Dr. Joseph H. Spearing, Harlan, has retired from general practice after 41 years. Dr. Spearing received the M.D. degree from the University of Kansas School of Medicine, Lawrence-Kansas City, Kansas and completed a residency at Jennie Edmundson Memorial Hospital, Council Bluffs. **Dr. Byron L. Gaul,** a dermatologist and dermatologic surgeon, has opened an office in Spencer. Dr. Gaul received the M.D. degree from the U. of I. College of Medicine. Prior to locating in Spencer, Dr. Gaul was in private practice in Bismarck, North Dakota. The Iowa affiliate of the American Heart Association has awarded grants for research to 2 University of Iowa doctors: **Dr. Joel Gordon** and **Dr. Byron Vandenberg,** both assistant professors of internal medicine. Five Keokuk Area Hospital staff physicians have been appointed to teaching positions at the Washington University School of Medicine (Barnes Hospital) in St. Louis, Missouri. They are: **Dr. David Siroospour** and **Dr. Ronald Kinateder,** Department of Surgery; **Dr. Milton Austin, Dr. Thomas Hakes** and **Dr. Wilson Davis,** Department of Internal Medicine. **Dr. David G. Wolff** has joined the staff at the Family Practice Center of Sioux City. Dr. Wolff received the M.D. degree from the University of California College of Medicine, Irvine, California and completed his residency at Scenic General Hospital in Modesto, California. Prior to joining the Family Practice Center, Dr. Wolff practiced in Aberdeen, South Dakota. Scott County Medical Society officers for 1989 are: **Dr. Robert Godwin,** president; **Dr. Rebecca Wiese,** president-elect; **Dr. Susan Perry,** secretary and **Dr. Carol Walton,** treasurer.

Deaths

Dr. Ralph W. Beardsley, 91, Whitehall, Wisconsin, died February 6. Dr. Beardsley received the M.D. degree from Rush Medical College in Chicago, Illinois and was in private general practice in Des Moines.

Dr. William I. Evans, 78, Mesa, Arizona, died January 9 at Valley Lutheran Hospital in Mesa, Arizona. Dr. Evans received the M.D. degree from the U. of I. College of Medicine and interned at U. of I. Hospitals and Clinics. He was a radiologist in Grinnell and a life member of the Iowa Medical Society.

Dr. Lewis L. Zager, 75, Waterloo, died January 3 in Harlingen, Texas. Dr. Zager received the M.D. degree from the U. of I. College of Medicine and served his general surgery residency at U. of I. Hospitals and Clinics. He was in practice in Waterloo for 27 years, retiring in 1978. Dr. Zager was a member of the American College of Surgeons.

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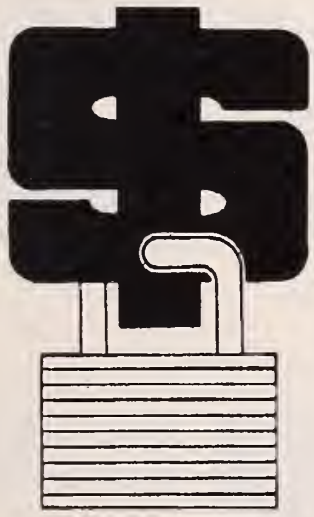
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DISEASES AND SURGERY OF THE COLON AND RECTUM

M.D. Means "Many Debts" To Today's Graduates

Editor's Note: Guest columnist for this month's In the Public Interest is Kay Colangelo, Ph.D., Program Associate in Student Affairs, University of Iowa College of Medicine.

MEDICAL STUDENTS USED TO BE able to get away with simply being students. They could postpone haircuts and avoid current events, sleeping and managing their financial aid. Today, if medical students are too preoccupied to think ahead about educational debt, they could discover too late a blight on their financial future.

In 1978, when I first began working with medical students, the federal government was still funding the low-, deferred-interest Health Professions Student Loan (HPSL). The University of Iowa received well over $3 million between 1964 and 1982.

The federal government is no longer willing to subsidize medical education. No new monies have been allotted to HPSL. Instead, new loan programs with terms closer to market-rate commercial loans have been introduced. The total cost of an Iowan obtaining a 4-year undergraduate medical education, including tuition and living expenses, has risen from $19,000 to $47,000 since 1978. More students are more deeply in debt. This trend shows no sign of change.

It is not helpful to lament, for all social programs have suffered cuts. Also, the public believes future doctors can borrow because they will earn way above the national average income.

Two years ago, in response to the increase in debt of our graduates, the College of Medicine established a comprehensive debt management program. The objectives are to prepare students for loan repayment and to develop in them an appreciation for financial responsibility and fiscal management.

To accomplish these objectives, a variety of strategies are used: class presentations, small-group workshops and panel discussions utilizing financial professionals like bankers and accountants.

The backbone of the program is the individual interview. A debt management software package provides a close estimate of loan repayment obligation in relation to length of residency, residency stipend amount and projected future income. Both yearly and monthly repayment schedules are completed. This allows graduates to anticipate years when the largest portion of income will be needed to discharge debt.

Rising costs and decreasing federal support are only partial causes of the increase in students' debt. Students' unnecessary borrowing and their avoidance of anticipating future debt repayment exacerbates their future burden.

Two actions have been taken that are in students' favor. The federal government has responded to increased debt level by lowering the interest rate on the HPSL. Also, the Iowa Medical Foundation has lowered the rate on Scanlon loans.

But when a freshman medical student decides not to accept a loan, and to cut expenses instead, we know progress is being made.

April 1989

Iowa Medicine

VASOTEC®

(ENALAPRIL MALEATE | MSD)

Contraindications: VASOTEC® (Enalaprit Maleate, MSO) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See AOVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See OOSAGE ANO AOMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and AOVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See OOSAGE ANO AOMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalaprit Maleate, MSO) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298 / patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction; rhythm disturbances, atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and OOSAGE ANO ADMINISTRATION), prostate hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE ANO AOMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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Journal of the Iowa Medical Society



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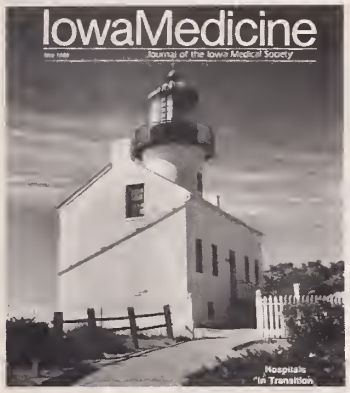
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President's Privilege



Parting Thoughts

THIS WILL BE MY LAST attempt to stimulate your thoughts before turning this page over to Dr. Don Rodawig for the upcoming year. It has been a distinct privilege and pleasure to serve as your elected president this past year. I wish each of you might have the interest and desire to serve in a similar capacity for the satisfaction it brings and the sense of accomplishment that comes with the position.

As I look back at the year, I can't count the major accomplishments the Iowa Medical Society has provided you as members but I can truthfully assure you we have not lost ground in our struggle to survive. If I could instill a single thought in your minds, I would wish all of you might become involved in active, organized medical activities. Each of you should attempt to return some portion of your "unpaid time" to this honored profession to which you were called to serve. Personal satisfaction, your practice and dedication to your patients and financial rewards are all part of the return for your hours of labor. However, the feeling which comes from giving that "extra bit" of yourself to medicine cannot be described. It can only be experienced in a true feeling of satisfaction and gratification for the job accomplished.

I encourage you all to attend an annual AMA meeting, a national leadership conference or a North Central Medical Association meeting to see organized medicine at its finest. These meetings will show you in a few hours how hundreds of dedicated physicians from across the country band together to try in any way possible to maintain the practice of medicine in a place and time in history that will hold it above any other profession or avocation. Your personal involvement will show you without question that the AMA and the IMS have many dedicated physicians who are in all ways attempting to defend the practice of medicine in the eyes of the public, the legislators and some bureaucrats who would try to destroy the profession.

Step forward, become involved at any level and see firsthand the difficulties facing your elected officers and staff at the county, state and AMA levels. Your personal involvement will provide a definite answer to the question "What does organized medicine do for me?"

Once again, it's been a privilege to serve you during this past year.

Daniel M. Youngblade M.D.

Daniel M. Youngblade, M.D.
President

A Roundtable Discussion

An Institution in Transition

The institution called the hospital continues to operate in a state of flux. For this month's special feature,* IOWA MEDICINE *gathered a panel of experts to discuss the changing face of Iowa's hospitals. Participants are: Edward Maahs, administrator, Stewart Memorial Hospital in Lake City; Keith McRoberts, trustee, Mary Greeley Hospital, Ames; James Tinker, administrator, Mercy Medical Center, Cedar Rapids; John Baker, M.D., chief of medical staff, St. Joseph Mercy Hospital, Mason City; and Don Dunn, president, Iowa Hospital Association. The discussion was led by Marion Alberts, M.D., scientific editor.

DR. ALBERTS: How does the hospital of the 1980s compare with the hospital of the 1960s?

DON DUNN: The hospital of the past was perceived as a community institution existing to meet the need for acute and emergency care. It continues to perform that function but since the 1960s and the passage of Medicare and Medicaid, the majority of financing underpinning the care rendered in hospitals comes from federal or state government. As a result, government has a growing impact on what occurs in the hospital. Utilization review regulation which has reduced the primary care patient load is particularly severe on rural hospitals.

ED MAAHS: In the 60s, most of the emphasis was on acute inpatient care and emergency care. During the past 20 years, hospitals have upgraded their accounting and financial management skills and focused on the business of health care. During the 60s, intensive care and coronary care units were being developed. Hospitals saw their role to take care of the people that came to the door. We didn't reach out at all.

JIM TINKER: I think these changes go back to the origin of Medicare. All of a sudden you had new funds pumped into the system which gave rise to a lot of the technology that allowed us to create the best health system in the world. Now you're seeing society pressure the health care system to limit resources flowing into the hospitals.

DR. ALBERTS: Do you think the increase in biomedical technology is beneficial to the big hospitals and detrimental to some of the smaller hospitals?

JIM TINKER: I think it is but not by design. This sophisticated equipment carries a very high price tag and requires a large cadre of talented support people. It really requires that you consolidate the equipment and staff in a larger facility.

ED MAAHS: I think the technology is advancing to the point where many rural hospitals are going to be able to offer some sophisticated care.

DR. BAKER: One of the big changes since the 1960s is the explosion of administration. I don't mean that in a derogatory way since I think hospitals are better administered than they were 20 years ago. We have many more physicians who are much more highly specialized. We see sicker patients. Length of stay is much less and outpatient surgery has changed the admission practices of hospitals. You see many things being done in doctors' offices which used to be done in hospitals. There is going to be increasing competitiveness between hospitals and doctors.



PANEL PARTICIPANTS — Participants in this month's panel discussion on hospitals include (from left): James Tinker, administrator, Mercy Medical Center in Cedar Rapids; Keith McRoberts, trustee, Mary Greeley Hospital in Ames; John Baker, M.D., chief of medical staff at St. Joseph Mercy Hospital in Mason City; Edward Maahs, administrator, Stewart Memorial Hospital in Lake City; Marion Alberts, M.D., *IOWA MEDICINE* scientific editor; and Don Dunn, president of the Iowa Hospital Association.

ED MAAHS: There definitely is a growth in group practice. Physicians are grouping together so they can develop facilities and resources to handle things hospitals were doing in the past.

DR. BAKER: That has its downside. For example, we've tried to keep our lab centralized so we can support a first class technological lab and radiology services. Now we've got a couple of big groups talking about getting their own labs and radiology. I think that's bad because it's duplication of services.

ED MAAHS: In the rural area it's devastating. In a rural area the hosptial is dependent on outpatient revenue. The hospitals that will remain strong are those who have a cooperative working relationship with the physicians.

DR. ALBERTS: Do you see an increase in the numbers of hospitals buying out practices and physicians working for the hospitals?

DR. BAKER: I think the physicians coming into practice nowadays are looking for support. They want to walk into a setup where they don't have to fuss over the nitty-gritty part of a practice. If small rural hospitals are going to survive, they'll have to provide that support to attract the physicians. I think the best thing they could do is consolidate.

ED MAAHS: I think there are hospitals learning that they don't know as much about physician practices as they thought. There are differences between operating a physician's office and running a hospital.

KEITH MCROBERTS: There's one dimension we haven't talked about and that's the shift in the expectation of what services and treatments the consumer is demanding. I think this is going to have a dramatic impact on hospital operations, especially the quality managment movement.

ED MAAHS: I believe hospitals and physicians have been working on quality issues for over 20 years. The professionals providing the care had indicators of quality, but it's difficult to explain those to the lay public. Hospitals were dealing with quality in the 60s, but now we're dealing with it on the front page of the newspaper.

DR. ALBERTS: What do you see as the most pressing problems confronting rural and urban hospitals?

DON DUNN: The most pressing problem for rural hospitals is survival. There are some rural hospitals, like in Lake City, that thrive because of a strong economic base, a dedicated medical staff and high quality management. The challenge to the urban hospital is staying on the cutting edge of health care delivery despite shrinking reimbursement.

(Continued next page)

I notice there seems to be an inherent contradiction in this discussion. Several panelists have noted that the competition between hospitals and doctors and various regulations imposed on hospitals are causing removal of procedures from the hospital into an ambulatory setting. So we have a competitive relationship developing. But I also heard you saying there are forces demanding an even closer relationship between physicians and hospitals. I think the overall trend will bring the medical practitioner and the institution even closer and at some point there may be less competition and a stronger capacity of the health system to deliver what the people expect and want.

'That we would be able to fashion a health policy which allows people access to the services we provide without having to compromise our instincts, values and quality of the service.'

KEITH MCROBERTS: I think that's right on target. Service to the community would be much improved if we began to look at that kind of collaborative effort as opposed to fostering competition based on out-of-date thinking.

DR. BAKER: The problem for rural hospitals is meeting the bottom line with increasing costs and increasing demands from physicians and patients for high tech care. I think the only way these people are going to survive is with support from a regional hospital.

JIM TINKER: Even if you increase the payment differential for rural hospitals the numbers are small enough you will have a difficult time generating sufficient surplus to buy the advances in biomedical research. I think Dr. Baker's suggestion of support linkage with large hospitals is good, but you're still not going to be able to save every hospital.

ED MAAHS: I feel there certainly will be some Iowa hospitals that will go under. There are some counties that have 3 or 4 hospitals and that probably isn't realistic. I think what we're seeing are essentially nursing homes that have some beds they call acute care. I think that's probably a trend that will continue in some areas.

JIM TINKER: That's a good point. The rural population is aging and the long-term care aspect of the hospital becomes a very important contribution to that community. I think we must look at what health services those communities need, rather than saying there has to be a hospital.

DR. BAKER: Speaking from the medical standpoint, how can you deliver a baby in a small rural hospital without pediatric or surgical support? How could you care for a patient with an acute MI without a coronary care unit and a cardiologist?

ED MAAHS: I understand how a physician who practices in an urban area with all the specialties around would feel that way.

DON DUNN: I predict we may see some further attrition in the number of hospitals in Iowa. But, part of the social infrastructure essential for rural life is the availability of good quality health care.

DR. BAKER: I think one thing that will help is transportation, like being able to chopper patients in and out.

ED MAAHS: I believe those who predict rural hospitals are only going to be affiliated with one larger regional hospital may be wrong. I believe we can pick and choose who can provide what services we need. It's got to be done so there's a win-win situation, so we're not just taking patients in one direction. I suggested this to the chairman of the Health Policy Corporation of Iowa when he was complaining about health care costs. I told him to send me all his employees who need hysterectomies or gall bladders, because I have a board certified general surgeon who'll do them for half price compared to the city because that's what Medicare is paying me anyhow.

DR. ALBERTS: How has the shortage of nurses impacted on the smaller hospitals?

ED MAAHS: We have problems with nurses, pharmacists, physical therapists, physicians, all of them. Right now the salvation in our area and many rural areas is the community colleges developing associate degree nurses who are trained to take care of patients at the bedside. Finding nurse anesthetists is a major problem area because there's no training program in Iowa.

JIM TINKER: There are many facets to the nurse recruitment/retention issue, but I think a key one is the physicians' contribution to the professionalism and status of nursing in the institution.

DR. BAKER: The thing no one has mentioned is pay. The status of nursing is important, but I think pay is important, too.

DONN DUNN: There is an explosion of opportunity for nurses and this employment undoubtedly will continue to drive nursing salaries up. I believe we need to face up to the issues of appropriate work environment and compensation for nurses. Women are now able to become physicians or take advantage of countless other opportunities.

JIM TINKER: We have to increase salaries for nursing. I don't think there's any question about that and we're trying to make a commitment to do it.

KEITH MCROBERTS: The basic problem is 60-70% of your costs in a hospital are people related. As soon as you start talking about what you can do to bring salaries to an appropriate level, you get the business community saying look what you're doing to my health insurance cost. What are the funds going to come from? It will take a significant amount of money to put those salaries at an appropriate level.

DR. ALBERTS: What about the uninsured and the underinsured in Iowa, are the hospitals running into much of a problem?

JIM TINKER: In our hospital we've gone from $480,000 in free care bad debts in 1980 to $3.3 million in 1987-88. The problem is one of social consciousness and social policy because we're getting to the point where we can't afford to continue to give away free care by the hospital or by the physicians at those rates of increase. Eventually, we're going to be forced to limit it even in a Catholic hospital where free care is part of the mission.

ED MAAHS: The total number of dollars we have given away in free care is definitely up. It's becoming more difficult for the hospital to play that social role because we're not able to shift those costs to other payers as easily as we once were.

DON DUNN: In 1987, Iowa hospitals delivered $98.6 million of unsponsored care, but it doesn't get a lot of public attention. Studies show some significant employers have embarked on a practice of employing less than full time people in order to avoid the attendant fringe benefit costs. The major fringe benefit cost they seek to avoid is health insurance. It isn't just rural versus urban, it depends on the community and the nature of that community's employers.

I don't think we're seeing any patient dumping for economic purposes in Iowa. We know there is some in other parts of the country and in the current environment in some urban settings it's understandable. Maybe not excusable but understandable. When an urban hospital is dealing with inadequate pay from Medicaid and Medicare they don't have the resources to take unlimited numbers of people who cannot pay.

'The challenge to the urban hospital is staying on the cutting edge of health care delivery despite shrinking reimbursement.'

ED MAAHS: I don't think hospitals are dumping patients. I do believe payors are dumping their responsibility for those patients. In the last 2 weeks I've been through 2 hearings trying to get reimbursed for services rendered to patients in 1987.

JIM TINKER: There must be a reversal of the payment practices. If no one reimburses your full costs for Medicare and Medicaid patients and then the next insurer or a group of employers cuts back because they wish to discount for a certain volume, you end up with a very small group of people paying full charges. Limits will have to be set so you'll be able to provide only so much free care.

DR. ALBERTS: How are we going to deal with that?

JIM TINKER: They will go to the university. The university will be the hospital of last resort. Any patient who comes through the emergency room is going to be taken care of at any hospital in Iowa. The problem is long-term management of difficult medical problems. I think this is going to be a real difficult

(Continued next page)

ethical and moral issue that has to be faced in a thoughtful, responsible way.

DR. ALBERTS: What is the biggest patient-related problem you face?

DR. BAKER: The greatest problem is patients' expectations.

ED MAAHS: The thing that is most frustrating to the physicians on my medical staff is getting calls from all over the country second and third guessing their medical decisions.

DR. BAKER: I would agree that is the most frustrating, depressing part of medicine today. If anything drives me out of practice that will be it.

ED MAAHS: It's not only the physicians who have practiced for 20 and 30 years. The same statements are being made by physicians in practice 3-5 years.

JIM TINKER: I think there are 2 issues of concern. One is the regulatory paperwork and big brother looking over your shoulder. The second is how to involve physicians in decision-making. I mean involve them in terms of their opinion and professional judgement about programs and program development even though these are basically business decisions the hospital has to make and the doctors have to accept.

DR. ALBERTS: Do most hospitals have 1 or 2 physicians on their board of directors?

JIM TINKER: Most hospitals do. We have 3 physicians on ours. It's best if they are working members with the administration and management on a day to day basis. They shouldn't function as employees, but as colleagues working together for a common objective in terms of program planning, policy development and allocation of financial resources.

KEITH MCROBERTS: In our case, there is active participation by the medical staff in all aspects of planning.

DR. BAKER: There has been a tremendous change. It's a real benefit for physicians to know everybody is pulling together and has input.

ED MAAHS: I think it's almost impossible to be successful without that. My board believes that without quality physicians, you just have bricks and mortar.

DON DUNN: In 1970 when I came to Iowa I think there were a lot of instances where the doctors were saying "That hospital administration is difficult, no wonder I can't take good care of my patients" and the hospital administrators were saying "It's terribly tough to live with doctors." It was very adversarial. So we've made some progress.

DR. ALBERTS: If you could make just one wish come true for your hospital, what would it be?

JIM TINKER: Equitable financing for health care. That we would be able to fashion a health policy which allows people access to the services we provide without having to compromise our instincts, values and quality of the service.

'The thing that is most frustrating to the physicians on my medical staff is getting calls from all over the country second and third guessing their medical decisions.'

ED MAAHS: My health care team would wish they could go back to taking care of people and their needs and not have to worry about whether they can put them in the hospital, or do they have to get them out. I mean really serve the patients.

KEITH MCROBERTS: I would wish for equitable reimbursement. Trying to get on with policy setting and social responsibilities in the face of inequitable reimbursement is very frustrating. Some of the external constraints are unreasonable.

DR. BAKER: I'd like to be able to practice as I have been where my medical judgement is not guided by economics. I don't think those pressures are going to go away, and it's making a very unhappy situation for doctors. The only way it's going to be resolved is to ration care as they have in England. If that's what this country wants to do, they can do it. Without me, of course.

DON DUNN: The problems of our system and the way we're financing it are immense. So, my wish would be the design of a system that keeps local decision making responsive to the local community but assures we give a fair start to everybody with health as we do with education. That's quite a wish.

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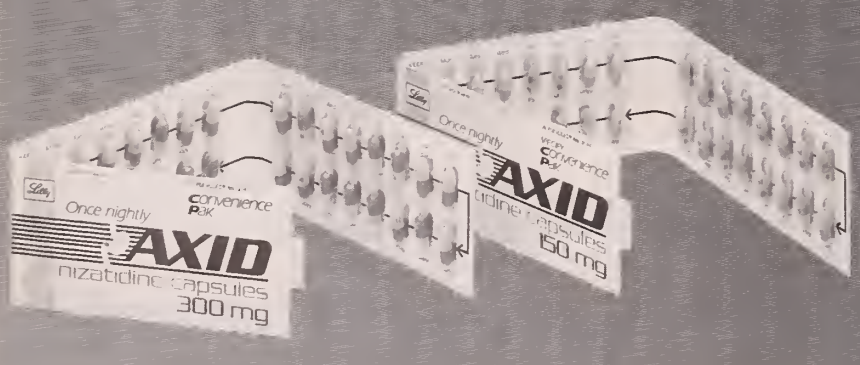
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AXID®

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Brief Summary

Consult the package literature for complete information.

Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 60 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that < 0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported, it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

Giardiasis in Iowa

NELSON P. MOYER, Ph.D.
Iowa City, Iowa

The author discusses transmission and case distribution of the parasitic disease giardiasis and why it should be made reportable.

GIARDIASIS IS THE MOST COMMON parasitic disease in Iowa and the United States.[1] The true incidence is unknown because there is no requirement to report cases to public health officials; however, the Centers for Disease Control estimate the average national recovery rate of *Giardia* cysts at 4.2% of specimens examined based upon a survey of laboratories in the United States.

The recovery rate of *Giardia* cysts in specimens submitted to the Hygienic Laboratory averaged 4% during the seventies. Beginning in 1981, the recovery rate increased to 9.4% in 1988. The number of specimens submitted to the laboratory increased markedly between 1972 and 1984 (Figure 1). Since 1984, the total number of specimens each year has remained similar, yet the rates of recovery of *Giardia* cysts have increased.

Dr. Moyer is associated with the University Hygienic Laboratory in Iowa City.

A summary of results from examination of fecal specimens since 1984 is presented in Table 1. It is interesting to note the case rate increased from a 10-year average of 4% to an average of almost 6% during the past 5 years. The difference between the specimen positivity rate and the case rate is attributed to receipt of multiple specimens from most patients since the recommendation for parasitic diagnosis is to collect 3 specimens every other day. Parasites encountered in Iowa during fiscal 1988 are shown in Table 2. These results are generally consistent from year to year.

The geographical distribution of patients submitting positive specimens to our laboratory is shown in Figure 2. This county map demonstrates the Hygienic Laboratory primarily serves Johnson County and rural counties in eastern Iowa while few specimens originate from the metropolitan population centers which are served by local laboratories.

(Continued next page)

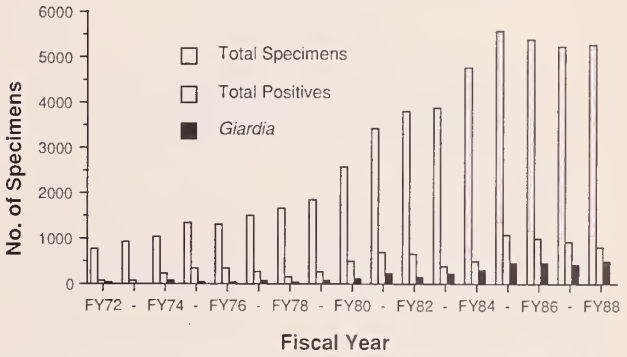


Figure 1. Examinations for Intestinal Parasites, University Hygienic Laboratory, Fiscal Years 1972-1988.

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TABLE 1

RESULTS OF INTESTINAL PARASITE EXAMINATIONS, FISCAL YEARS 1984-1988

Fiscal Year	Total Fecal Specimens Examined	Parasites Found No.	Parasites Found % of Total	Giardia Found No.	Giardia Found % of Total	Giardia Found % of Positives	Giardiasis Cases No.	Giardiasis Cases % of Total
1984	4,750	481	10	309	6.5	64	213	4.5
1985	5,558	1,063	19	476	8.6	45	349	6.3
1986	5,392	988	18	469	8.7	47	324	6.0
1987	5,229	931	18	428	8.2	46	291	5.6
1988	5,273	813	15	496	9.4	61	329	6.2

TABLE 2

INTESTINAL PARASITES FOUND, FISCAL YEAR 1988

Organism	Number Found	Total
Protozoans:		863
Blastocystis hominis	120	
Chilomastix mesnili	15	
Cryptosporidium	56	
Dientamoeba fragilis	1	
Endolimax nana	61	
Entamoeba coli	81	
Entamoeba hartmanni	17	
Entamoeba histolytica	13	
Giradia lamblia	496	
Iodamoeba butschlii	3	
Helminths:		88
Ascaris lumbricoides	7	
Clonorchis sinensis	26	
Enterobius vermicularis	2	
Hookworm	33	
Hymenolepsis nana	2	
Strongyloides stercoralis	5	
Trichuris trichiura	13	
Total Parasites Found		951

TABLE 3

***GIARDIA* CASES BY PATIENT AGE**

Patient Age (Years)	Number	Percent
Less than 1	3	1.7
1-2	45	25.0
3-4	12	6.7
5-9	13	7.2
10-19	12	6.7
20-29	30	16.6
30-39	28	15.6
40-49	15	8.3
50-59	9	5.0
60-69	10	5.6
70-79	2	1.1
80-89	1	0.5
Total	180	

The case distribution for 180 consecutive cases where patient age was given is shown in Table 3. Most cases occur in 1-2 year old children and in the 20-39 year-old females who care for them. Day-care center transmission has been reported.[4] These results and the experience of 5 day-care center outbreaks we investigated in cooperation with the Johnson County Health Department during the past 4 years indicate the primary transmission of *Giardia* cysts in Iowa is the fecal-oral route.

Kot Flora, Coordinator, Disease Prevention and AIDS Program, Johnson County Health Department, has developed guidelines for control and prevention of giardiasis in day-care centers which have proven effective and should serve as a model for statewide implementation.

The seasonal distribution of giardiasis cases is characteristic of waterborne diseases as shown in Figure 3. However, sampling of over 200 wells in Iowa where cases of giardiasis were attributed to ingestion of potable

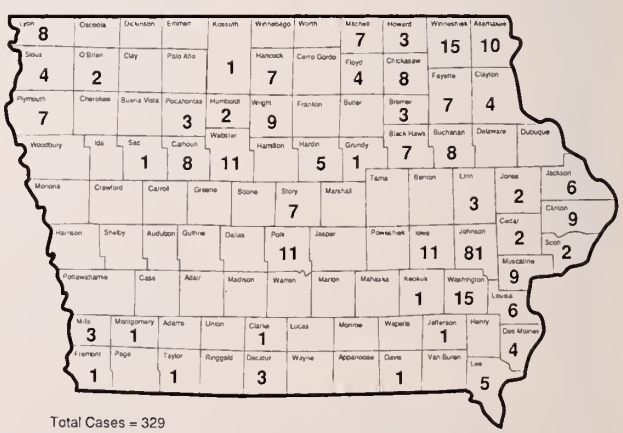


Figure 2. Distribution of Cases of Giardiasis Diagnosed by the University Hygienic Laboratory, Fiscal Year 1988.

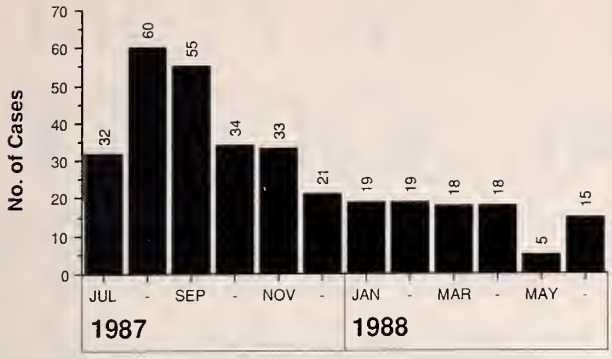


Figure 3. Seasonal Distribution of Giardiasis Cases in Iowa, Fiscal Year 1988.

water revealed only one positive result. That contaminated well was actually a brick lined cistern.[2] No studies of surface water contamination have been conducted in Iowa due to the cost and limitations of existing technology for demonstration of *Giardia* cysts in environmental samples.

Anecdotal information suggests cyst transmission occurs in children's wading pools and when children are bathed together or bath water is used concurrently by several children. Literature reports of *Giardia* transmission by ingestion of water from public supplies invariably involve a large number of cases in a clearly identifiable point source epidemic.[3] Transmission following a fecal accident in a public pool has been reported.[5]

A complete understanding of giardiasis in Iowa requires political, epidemiological and laboratory intervention. The disease must be made reportable to establish true incidence. Case histories must be studied to determine source of exposure and modes of transmission. Finally, prospective laboratory studies must be undertaken to identify reservoirs of cysts in both environmental and mammalian systems. Meanwhile, prevention of infection by scrupulous attention to sanitation, personal hygiene and avoidance of untreated surface water is recommended.

The data presented here are incomplete and may not represent conditions statewide. We encourage physicians to submit fecal specimens to the Hygienic Laboratory for parasitological examination so we may continue to analyze the morbidity and epidemiology of giardiasis in Iowa. Consultation is required before environmental samples for cyst examination are collected. Parasitology kits and consultation may be obtained by calling the Hygienic Laboratory, 319/335-4500.

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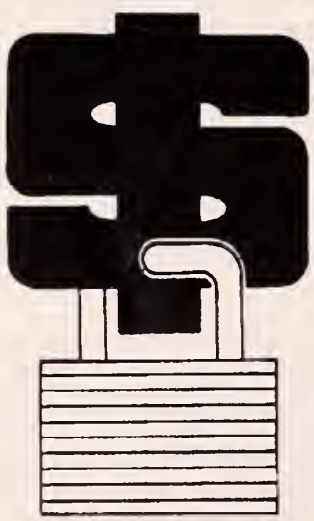
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Informed Consent: Procedure Specific

JAMES M. CATERINE, M.D., F.A.C.S.
BARRY MILLER, M.D.
Des Moines, Iowa

The Iowa Supreme Court recently set forth guidelines concerning informed consent. The authors discuss formulation of procedure specific surgical consent forms which comply with Iowa Code requirements.

THE THREAT OF LAWSUITS is a growing concern facing every physician in our litigious society. Causes of the liability crisis range from attitude changes toward physicians to misunderstandings during the informed consent process. This is occurring at a time when the overall quality of medical care is at its highest level. The frequency of malpractice claims and the amount of awards have skyrocketed over the last 5 years.

According to a recent issue of *Medical Economics*, 4 doctors of 10 have been sued at least once in the last 5 years with indemnities paid in 40% of cases.[1] The average monetary amount was over $80,000 per claim. In Iowa, a recent court study revealed the number of malpractice cases doubled between 1981 and 1985 with average liability award of over $187,000.[2]

Dr. Caterine is a general surgeon in private practice in Des Moines. Dr. Miller is a senior surgical resident at the VA Medical Center in Des Moines.

Informed consent and the doctor-patient relationship are sometimes at the core of the problem. Post-operative surgical complications were the number one cause of malpractice claims in 1985-86 according to the St. Paul Fire and Marine Insurance Company.[1]

Elvoy Raines, J.D., in the May, 1987 *IOWA MEDICINE,* states "at the core of most lawsuits is either surprise or disappointment. The patient is surprised by the cost of hospitalization or disappointed in the outcome because all reasonable risks were not fully explained during the informed consent process."[3]

"Informed consent should be realistic. Discuss alternative and other therapy options with the patient. This should be done in the office where there are fewer pressures and plans can be reviewed calmly," stated surgeon Pablo Recinos, M.D. in the same issue.[4]

The Iowa Supreme Court recently provided guidelines concerning what constitutes informed consent in Iowa Code 147.137, 1987 (Figure 1). Section 1 of the code requires the procedure be explained in general terms and the known risks and complications and the probability of occurrence of these risks outlined for the patient. This last statement regarding the probability of occurrence has created the need for procedure specific consent forms. Section 2 of the code is the patient's acknowledgment that they understand the procedure and possible complications. Section 3 is the required signature of the patient.

Two malpractice cases with informed consent at issue exposed the need for revision of the informed consent law. In 1983, Iowa courts applied the "patient rule" in *Cowman v. Hor-*

(Continued next page)

A consent in writing to any medical or surgical procedure or course of procedures in patient care which meets the requirements of this section shall create a presumption that informed consent was given. A consent in writing meets the requirements of this section if it:

(1) Sets forth in general terms the nature and purpose of the procedure or procedures, together with the known risks, if any, of death, brain damage, quadriplegia, paraplegia, the loss or loss of function of any organ or limb, or disfiguring scars associated with such procedure or procedures, with the probability of each such risk if reasonably determinable.

(2) Acknowledges that the disclosure of that information has been made and that all questions asked about the procedure or procedures have been answered in a satisfactory manner.

(3) Is signed by the patient for whom the procedure is to be performed, or if the patient for any reason lacks legal capacity to consent, it is signed by a person who has legal authority to consent on behalf of the patient in those circumstances.

Figure 1. Iowa Code definition of informed consent (147.137).

naday. The patient rule in elective surgical procedure states, "the physician's duty to disclose information about risks of the procedure is measured by the patient's need to have access to all information material to making a truly informed and intelligent decision."[5]

The case involved whether complete informed consent had been obtained from a patient undergoing elective vasectomy when postoperative complications of sperm granuloma and scrotal hematoma resulted in eventual testicular atrophy. The second more recent case, *Pauscher v. Iowa Methodist Medical Center 1987* involving a fatal antiphylactic reaction to IVP contrast medium, resulted in the Iowa Supreme Court stating the "patient rule" should be applied to all informed consent cases. The patient has the right to be informed for all medical treatment. Six exceptions to the "patient rule" requiring full disclosure to the patient were also formulated (Figure 2).

To comply with the new Iowa Code concerning procedure specific consents, a search was made for this type of consent form. The current hospital consent form is too general and doesn't comply with the code requirements. No such form was available from the American Medical Association or the American College of Surgeons. Therefore, a new procedure specific consent form was written for each surgical procedure (Figure 3).

(1) A complete and candid disclosure might have a detrimental effect on the physical or psychological well-being of the patient;

(2) A patient is incapable of giving consent by reason of mental disability or infancy;

(3) An emergency makes it impractical to obtain consent;

(4) The risk is either known to the patient or is so obvious as to justify a presumption on the part of the physician that the patient has knowledge of the risks;

(5) The procedure itself is simple and the danger remote and commonly appreciated to be remote;

(6) The physician does not know of an otherwise material risk and should not have been aware of it in the exercise of ordinary care.

Figure 2. Exceptions to the "patient rule" on informed consent.

The form is composed of 3 sections, all in compliance with Code 147.137. The top half of the consent states the procedure and purpose in general terms followed by the mortality risk of the procedure and individual percentage risks of the possible complications when available. The middle portion of the form lists possible complications and risks common to all surgical procedures and is included on each consent. The final paragraph acknowledges the procedure and complications have been explained to the patient and the patient understands and consents to the planned procedure. This is followed by the patient's signature.

The consent forms were approved by Tom Finley, J.D., legal defense counsel for Iowa Physicians Mutual Insurance Trust, and Mark D. Ravreby, M.D., J.D. before being printed.

To date, consent forms have been completed for 35 surgical procedures. Patients have responded positively to the new forms being used in the office. The forms have made physician-patient discussion of the planned surgical procedure easier and more effective. The carbon copy format of the form also allows the patient to take the consent form home for further review.

References

1. Paxton, HT: Why doctors get sued. *Medical Economics;* April 18, 1988; 42-50.
2. *Liability Medicare assignment require action by physicians.* Iowa Medical Society, Statehouse Update; March 1988.
3. Recinos, PR: Risk management: a general overview. *Iowa Medicine* 1987;77:220-21.
4. Raines, E. Risk management in everyday practice. *Iowa Medicine* 1987;77:224-26.
5. Finley, T: *Iowa's new rule on informed consent.* Iowa Medical Society, Special Information Bulletin, August 1987.

INGUINAL HERNIA REPAIR

An Inguinal Hernia is a weakness or tear in the fiberous tissue of the lower abdomen. In males, the Hernia arises at or near the site where the cord carrying sperm and blood vessels leave the abdomen and course to the testicle. Repair of the Hernia near these structures could possibly lead to the following complications. (In females, injuries to the spermatic cord and testicle does not apply)

1. OVER-ALL COMPLICATION RATE of 7% with a death risk of 0.3%
2. RECURRENCE RATE (one side) 0.8% to 7.0%
 BILATERAL 2-4%
 RECURRENT 5-35%
3. WOUND INFECTION 0.5 to 1.0%
4. WOUND INFECTION RECURRENT 2-3%
5. TESTICULAR ATROPHY/LOSS 1.4%
6. ACUTE URINARY RETENTION 33%
7. NERVE INJURY to Ilioinguinal, Genito-Femoral, Illo-Hypogastric giving rise to inner, lateral thigh, groin, base of penis numbness neuropathy/neuroma 1.4 to 11% (may be temporary or permanent)
8. HYDROCELE FORMATION
9. MISSED HERNIA not appreciated while under anesthesia
10. SCROTAL and/or penis hematoma/bruising
11. DIVISION OF SPERMATIC CORD with possible sterility
12. INJURY TO INTRA-ABDOMINAL STRUCTURES of small bowel, colon, appendix, ovary, bladder with possible infection, obstruction and/or organ death
13. INJURY TO FEMORAL ARTERY/VEIN with bleeding, possible vascular compromise to lower extremity, abnormal artery-vein connection, blood clot formation, leg swelling
14. POSSIBLE USE OF ARTIFICIAL TISSUE SCREEN to reinforce weak natural tissue giving rise to risk of foreign body reaction, infection, fluid collection around the screen

References Used
Nyhus, L.M. and Condon, R.E. Hernia, 2nd Edition pp 241,273,274. Lippencott 1978
Surgical Clinic N.A. 51:1293-1307, 1971
Greenfield, L.J. Complications in Surgery and Trauma. Lippencott 1984

GENERAL POST OP COMPLICATIONS

DEATH, STROKE WITH PARALYSIS, PULMONARY EMBOLIS (Blood Clot to Lung), DEEP VEIN THROMBOSIS (Blood Clot and Swelling of Leg), I.V. SITE CELLULITIS (Infection From I.V. Catheter), ADHESIONS WITH BOWEL OBSTRUCTION, ILEUS (Bowel Malfunction) PERITONITIS (Intra-Abdominal Infection), MYOCARDIAL INFARCTION (Heart Attack, Abnormal Heart Beat), URINARY RETENTION REQUIRING CATHETERIZATION (Injury to Urinary Tract, Stricture Urethra), URINARY TRACT INFECTION, PNEUMONIA, ATELECTASIS (Peripheral Lung Collapse).

WOUND PROBLEMS:

SEROMA — Collection of Nature Body Fluid (Non-Blood)
HEMATOMA — Collection of Blood in Wound
ABCESS — Collection of Pus in the Wound (Infection)
SUPERFICIAL SEPARATION OF FATTY LAYERS OF WOUND
DEEP SEPARATION OF ALL LAYERS
INCISIONAL HERNIA — Weakness of Incision
PARASTHESIS — Numbness of Skin Around Incision
KELOID — Prominent Incisional Scar

ALLERGIC REACTION TO SUTURE, ALLERGIC REACTION TO TAPE, ALLERGIC REACTION TO SURGICAL PREP, ALLERGIC REACTION TO ANTIBIOTICS, VOMITING WITH ASPIRATION OF MATERIAL INTO LUNGS, BOWEL PREP (Dehydration with Electrolyte Problem, Seizure), N/G TUBE INSERTION (Epistaxis, Sinusitis, Nose Necrosis, Aspiration, Esophageal Perforation, Stomach Perforation), ANTIBIOTIC INDUCED (1. Superinfection 2. Colon Infection 3. Renal Damage), RETAINED SURGICAL INSTRUMENT OR FOREIGN BODY.

INFORMED CONSENT FOR SURGERY

This is to acknowledge and confirm that my planned surgery, _____ has been discussed with me in detail with respect to the actual procedure. I understand and agree to proceed with the surgical procedure and confirm that I have been fully advised in all aspects of it. I am also advised that it may be necessary for the surgical residents to participate in my care under direct supervision of my attending surgeon. On occasion the resident may be the only physician making daily hospital rounds. If this occurs, my medical condition will be discussed thoroughy with my attending surgeon on a daily basis and any post-operative care given to me by the resident will be by direct order of my doctor.

PATIENT SIGNATURE

_____ _____
PHYSICIAN PARENT / GUARDIAN

_____ _____
WITNESS DATE

SURGICAL AFFILIATES, P.C.
421 Laurel St. • Suite 206 • Des Moines, Iowa 50314 (515) 244-3777

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Figure 3. A new procedure specific patient consent form.

Today's Dilemma of Right and Wrong

We read almost daily that the budget deficit is a crisis, the trade imbalance is a crisis, pollution of the environment is a crisis. As serious as these crises and others of similar character may be, they pale by comparison with a far different crisis we now face — a bioethical crisis. This crisis is of grave concern, for bioethical issues challenge our wisdom, our perception of values, our perception of the dignity of the human condition, the meaning of life and our belief that we are unique among all living things.

It is of interest that the 1969 and 1972 editions of the *Opinions and Reports of the Judicial Council* of the American Medical Association contain this statement: "Ethical principles are basic and fundamental. Men of good conscience inherently know what is right or wrong, and what is to be done or to be avoided." A later edition deleted that statement, and for good reason.

The trouble is we have somehow lost our footing. The old standards of right and wrong are coming up short. Tradition is old-fashioned. We no longer seem able to distinguish with confidence between right and wrong. The formerly accepted ethical principles are proving inadequate in this technological age. Technology has come along too fast. There are too many bioethical gray areas. The list is long: in vitro fertilization, surrogate motherhood, semen banks and eugenics, the abortion issue that will not go away, genetic engineering, allocation of limited health funds, "harvesting" tissue and organs from aborted fetuses or from life-supported anencephalic newborns, mercy killing, society's response to AIDS, the incredible dispute as to when life begins, the dilemma when 2 different rights collide and on and on.

It is imperative that we give these bioethical issues our most thoughtful consid-

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eration, from which, hopefully, will evolve new ethical standards and principles that merge with the old — standards without which a society cannot remain civilized, as we now understand it, indefinitely. Unfortunately, whether willingly or not, doctors are caught in the middle.

As we grope our way toward answers to these problems, we need guidance. But where can it be found? Ethicists write books and counsel in medical centers, journals publish a profusion of articles on the subject, the *Journal of the American Medical Association* reported the frightening drama of the mercy killing of "Debbie" and *IOWA MEDICINE* devoted an entire issue to the subject of medical ethics. But what of religion? Could it too not play a part, for religion is an integral component of human history?

The great religions of the world have all enunciated ethical principles, many of which are said to be truths revealed by God. There are those who hope that society will some day accept the premise that there are certain enduring values, perhaps as expressed by the teachings of the great spiritual and religious leaders of the past, which are not subject to, and dependent on, the "shifting sands" of the moment. Socrates and the power of reason are not always enough. Regrettably, however, religious leaders don't always speak with a common voice. In regard to this lack of consensus, abortion can be mentioned, but carried to its extreme, we need look no further than the death sentence decreed by Ayatollah Khomeini, in the name of Islam, on Salman Rushdie.

As we consider the many gray areas, they are seen to be a mix of problems of broad social concern and public policy, and individual problems pertaining to whether a given patient "will either live or die depending on the ethical decision made." Either way, the problems are incredibly difficult, and men of goodwill can disagree. Nonetheless, the bioethical issues are there. They will not go away. Can they ever be resolved and appropriate standards established? Hopefully yes, but until that day of fulfillment comes, let us at least agree on these propositions:

1) What is legal is not necessarily ethical; and what is ethical may at times be illegal.

2) What man *can* do by means of technology should sometimes be proscribed. — *Daniel F. Crowley, M.D., member, IMS Scientific/Editorial Panel*

Osteoporosis May Be Inherited

Osteoporosis may be inherited, according to a study recently published in the *New England Journal of Medicine.*

However, some observers noted that mothers and daughters often share similar eating and exercise habits, which, rather than genetics, may account for the link.

Osteoporosis, which decreases the density of bones, causes some 1.3 million fractures a year. It affects primarily women, who may become more susceptible after menopause because of lower estrogen. *(From AM NEWS)*

Surgery Among Most Stressful Occupations

Surgeons have the fourth most stressful job in the United States, according to the *Jobs Rated Almanac.* Only fire fighters, race car drivers and astronauts have more stressful occupations. National Football League players and police officers have slightly less stressful jobs. Members of Congress ranked 18th; lawyers ranked 25th. *(From AM NEWS)*

Citing Smoking on Death Certificates

Utah and Oregon have become the first states to list tobacco use as a possible factor on death certificates. The AMA has urged other states to adopt such laws.

The measure will provide valuable evidence in lawsuits against tobacco companies, says an advocacy group made up of physicians, attorneys, academics and other professionals.

Since the first surgeon general's report on the dangers of smoking, the percentage of Americans who smoke has declined from 40% to 29%. *(From AM NEWS)*

(Continued next page)

AMA Membership

The American Medical Association exceeded its membership and revenue projections for 1988.

In a year-end report released in late February, the AMA Division of Membership noted the association had 260,339 members at the end of last year, 6,616 (2.6%) more than at the end of 1987. One state, Montana, voted in 1988 to unify with the AMA. *(From AM NEWS)*

Anniversary For Family Physicians

Family physicians recently celebrated the 20th anniversary of the official recognition of their specialty by the American Board of Medical Specialties.

Over 26,800 family physicians have graduated from the 381 FP residency training programs across the nation, notes the American Academy of Family Physicians. There are 215 FP departments or divisions in U.S. medical schools.

Over 33,000 FPs have been certified by the American Board of Family Practice, the first such board to require recertification. The AAFP was also the first medical group to require continuing medical education. *(From AM NEWS)*

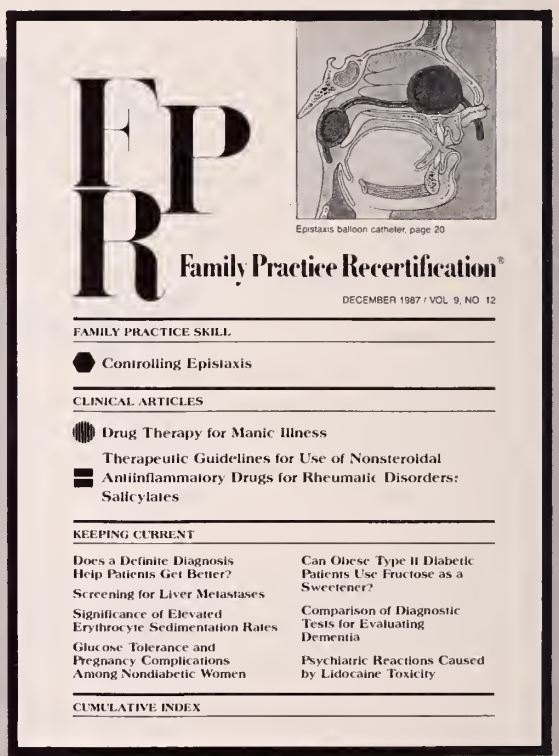
LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

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Marion E. Alberts, M.D.

The Editor Comments



Hospitals and Health Care

A hospital is a living organism, made up of many different parts having different functions, but all these must be in due proportion and relation to each other, to produce the desired general results. The stream of life which runs through it is incessantly changing; patients and nurses and doctors come and go, today it has to do with the results of an epidemic, tomorrow with those of an explosion or fire. The reputation of its physicians or surgeons attracts those suffering from a particular form of disease, and as one changes so do the others. Its work is never done; its equipment is never complete; it is always in need of new instruments and medicines; it is to try all things and hold fast to that which is good.

— John Shaw Billings (1838-1913)

THOSE WORDS IN AN ADDRESS by Dr. Billings at the May 7, 1889 opening of Johns Hopkins Hospital would be appropriate at the opening of a hospital today. The fabric of a hospital remains the same, only the pattern may change. Now, 100 hundred years later, the hospitals of today remain viable, though there are indications some are suffering the pains of changes in delivery of health care.

The roundtable discussion reported in this issue of *IOWA MEDICINE* presents viewpoints from several sectors of the hospital complex. Social changes have altered the functioning of the different parts of the hospital and new modalities of medical and surgical technology have been directly involved in this functioning. Five to 7 decades ago, the diseases which were the greatest menace were tertiary syphilis of the brain, pulmonary tuberculosis, acute rheumatic fever and poliomylitis. Richard D. Lamm, former governor of Colorado, elaborating on remarks by Lewis Thomas, scholar-in-residence at Cornell University Medical School, states because of classic clinical research these 4 diseases have nearly vanished as public health problems at a cost of pennies compared to what we would be spending if they were yet with us today. Lamm's point is that present high technology is very costly. He makes an analogy that we would not have cured poliomylitis by huge expenditures in perfecting artificial lungs, any more than we will understand and cure heart disease by huge expenditures in artificial hearts.

Admittedly, Mr. Lamm has proposed some controversial suggestions in the past in regard to rationing of certain health services. Those suggestions I do not argue here. We are talking about hospital care, the rendering of health care in the hospital and the costs thereof. It is interesting though that Mr. Lamm is a member of the profession that questions whether doctors have provided every modality of diagnosis and treatment available for our patients so we are not culpable of errors of omission in a malpractice action.

Many hospitals, in order to exist or due to the need to increase profits, have become

(Continued next page)

very aggressive in their marketing of health care. A recent article in *The Wall Street Journal* (February 27, 1989), reports on actions being taken against hospitals for paying bounties for physicians' referrals. Kickbacks to physicians are considered illegal as well as unethical. In contrast to direct kickbacks many hospitals are purchasing physicians' practices as well as fostering specialized clinics as part of their marketing programs. In years past, the larger hospitals did have specialty clinics, but they were a part of their charity programs, not for-profit seeking of the health care market.

Medical care in the office and the hospital today is changing rapidly. Physicians, hospitals and consumers must exert a concerted effort to provide the best possible health care at the least cost to our present and future generations. Our plea is for cooperation in all arenas to this end, and the great tradition of American medicine can be maintained second to none. I am sure our readers will profit from the comments made by the roundtable participants.

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Richard M. Caplan, M.D.

CME Notebook



Education Everywhere

EVERYWHERE ABOUT EVERYTHING puts it a little strongly, but how drab life would be without a little hyperbole. Consider the matter of developing "trigger finger" in my left thumb and middle finger. An unpleasant condition with some discomfort and functional impairment, I knew little about it. Now I know much more. As Mark Twain said, "There are some things you can learn from swinging a cat by its tail that you can learn in no other way."

How we lament all we don't know about medicine, while there is so much knowledge — outside even my broad definition of CME — waiting to be encountered.

The easiest mode of learning must be reading, although television is said to be replacing books among our young. With television, one would rarely record and replay a choice sentence, as I recently reread several times this sentence, "One swallow does not make a summer, but one skein of geese, clearing the murk of a March thaw, is the spring." What a stunning metaphor! It comes from *Sand County Almanac* by Aldo Leopold, an Iowan who became a leading ecologist, conservationist and essayist full of eloquent images, gentle good humor and profound ideas. Here is another fragment of his that delights me:

"My dog, by the way, thinks I have much to learn about partridges, and, being a professional naturalist, I agree. He persists in tutoring me, with the calm patience of a professor of logic, in the art of drawing deductions from an educated nose. I delight in seeing him deduce a conclusion, in the form of a point, from data that are obvious to him, but speculative to my unaided eye. Perhaps he hopes his dull pupil will one day learn to smell."

I feel ashamed to be among the "educated" that know so little of these geese. Leopold later says "our spring geese makes daily trips to corn," and observes, "a spring goose convention," in these illustrations using "geese" as a singular, and "goose" as a sort of plural. Those grammatical surprises create a fresh, ponderable image.

Another sentence says, "Once again, I would I were a muskrat." My pause made me shift the opening phrase to test how the meaning changed: "I would I were a muskrat once again." That pause probably happened because I was reading Leopold as an antidote to a medical article that includes this sentence: "_____ is the treatment of choice for severe necrotizing vasculitis, which is steroid resistant." That made me ponder the enormous difference made by a comma after "vasculitis." Try the 2 ways. See how that comma could influence your therapy. I wonder if the author gave it careful thought.

There is so much to learn. And I need to start watching and listening better for the geese.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

Selling a Medical Practice

MERGERS AND ACQUISITIONS are difficult issues for physicians and hospitals. Physicians wish to obtain maximum value for their practice; hospitals are concerned about shrinking revenues. Now, hospitals and physicians are looking to each other for help.

Competition from hospitals and other physicians, declining reimbursement and consumerism among purchasers of health care are impacting physicians' incomes. Physicians are pursuing 2 courses of action to maintain or expand their income level.

The first course is increasing efficiency while expanding revenue base. Physicians are offering new programs to enhance revenues. Family practitioners, for example, can perform Holter monitoring and enter the cardiac rehabilitation market. Physicians can also enhance their operating efficiency through work study analysis, billing and coding programs and aggressive credit and collection programs.

In many areas, joint ventures are being undertaken between physicians and health care institutions. Some hospitals are financially assisting physicians in expanding an existing practice or establishing a new one. This relationship is understandable. Physicians control hospital admissions and many hospitals view physicians as logical allies.

On the other hand, physicians feel threatened by a host of competitors including hospitals. Physicians are concerned about maintaining patient control. Hospitals are targeting the ambulatory market and providing services traditionally provided by physicians. Individual and group practices lack the capital to battle larger competitors. Physicians generally distribute all their earnings and funds are not available for new program development or practice expansion.

Once, physicians could go to the friendly banker and get a loan for expansion. However, bankers have begun applying the same financial standards to a practice as they would to any business enterprise. Positive cash flow and collateral value are needed to make bankers happy.

The need for capital to expand or maintain market position and a lack of available credit are forcing many physician groups to move under the umbrella of an institution. Physicians can merge their practice with other physicians, or can consider an outright purchase of their practice by a party such as a hospital.

Proposed legislation under the Medicare Fraud and Abuse Statutes would place restrictions on the purchase of physician practices by a hospital. There can be no direct tie between a purchase price and the number of patients admitted to a hospital. However, hospitals will continue to purchase physician practices. The physician who controls the patient has intrinsic value. The advantage to a physician is receiving a cash payment for the practice and being relieved of management responsibility.

In valuing a practice, it is essential for a physician to have comprehensive demographic information on his/her patient base, geographic market and referral pattern information. This allows the purchaser to analyze all cash flow potential.

There are many rules of thumb in valuing a physician's practice. The formulas offered in popular literature generally overstate the value of a practice. The positive cash flow after a normal distribution to the physician represents the true economic value of a practice. The physician must be aware of economic realities.

This article was authored by Stuart Gaines, a consulting manager with McGladrey & Pullen, Des Moines.

A medical practice does not have great economic value unless it satisfies a specific need of the purchaser. To maximize the actual dollars received for a practice, the physician has 2 options. First, practice cash flow can be improved through operating efficiency. Second, the physician should carefully identify potential suitors who would most benefit from the purchase of the practice. Be aggressive in stating what you want from a purchaser. However, you should fashion the proposal with a good understanding of the purchasers' needs.

Sale of a medical practice is complex. Compensation formulas, governance, practice autonomy, working hours and malpractice tail insurance all have a direct impact on the physician's compensation level. To prevent bruised egos the physician should realistically address these issues before negotiations begin. These issues can make or break a potential relationship even if the buyer and seller agree on price.

The physician may feel hospitals have the internal expertise to handle a practice purchase. Hospital management may be competent at running a hospital but do not necessarily understand operation of a medical practice. Therefore, the physician should plan not only the sale of the practice but its integration into the purchaser's environment. In many cases a hospital will accept much of what the doctor proposes if it is presented in a coherent format. However, if the hospital is left to its own devices, it will probably develop an integration plan which resembles operations with which they are familiar. In this case, the marriage between the doctor and the hospital will probably be turbulent.

'The positive cash flow after a normal distribution to the physician represents the true economic value of a practice.'

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David L. Thomas, M.D.

PRO Update



Managing PRO Review Changes

(This is the final article in a series written to inform IMS members of forthcoming changes in the PRO Medicare review program. David Thomas, M.D. is a family practitioner in Marshalltown. Dr. Thomas is chairperson of the IFMC's Comprehensive Review Committee and a member of the IFMC Executive Committee and Board of Directors.)

THIS COLUMN HAS OUTLINED major procedural changes made in Medicare PRO review on April 1. It is the IFMC's hope that a majority of you were prepared for these changes prior to implementation. Many of you have attended the IFMC's physician training seminars. You have learned about new review programs during IMS Executive Council and/or Committee on Medical Service meetings, IFMC Provider Advisory Committee meetings or discussions held in hospitals. All of you have received information through *IOWA MEDICINE,* the IFMC NEWS and the recently-distributed "Physician Reference Manual."

Of course, the IFMC anticipates questions while providers adjust to the new requirements. If you have a concern, contact the IFMC and ask to speak with the review manager for your hospital. It is to our advantage and your advantage to ensure the process runs smoothly. After talking to several provider groups about possible implications of the new changes, I'm convinced the majority of questions generated by the new review will be administrative rather than clinical in nature.

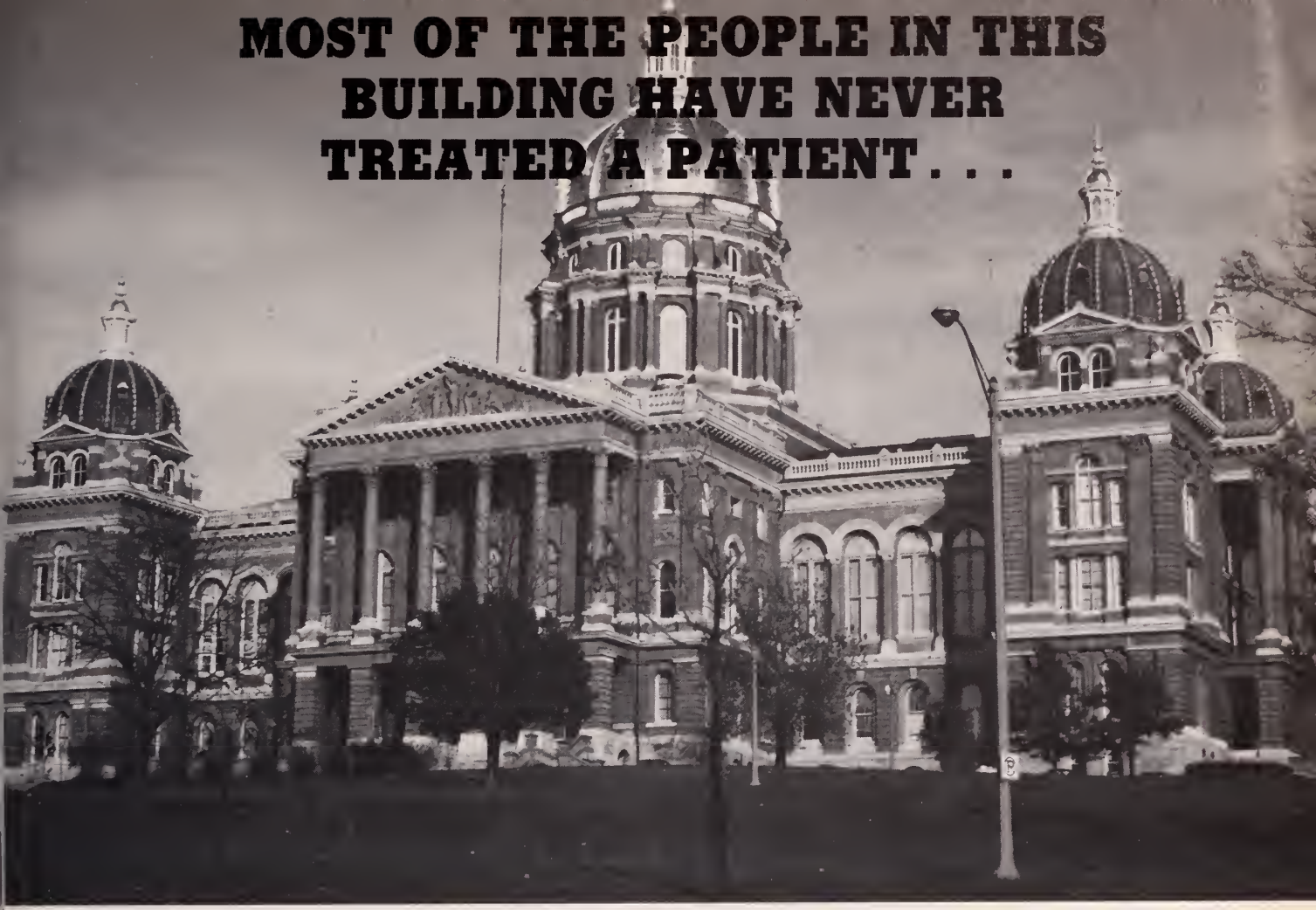
The same "rule-of-thumb" that has always helped physicians with the review process applies to the new requirements. Clear and thorough documentation — in acute and non-acute care settings — will help you avoid adverse review determinations. Specifically:

- Explain why the patient requires a procedure or hospitalization. Has outpatient management been attempted? Is a more conservative method of treatment available?
- Make sure all abnormal laboratory results have been addressed — whether or not they pertain to the principal diagnosis.
- Review your chart for accuracy and completeness. This will help promote effective patient care and positive review results.
- Don't leave loose ends upon discharge — if the patient will go home with a continuing illness, explain why, and relay your plans to monitor or correct the condition.

I'd like to close with a reference to an article I wrote for the Summer, 1987 IFMC NEWS, entitled, "Tips on How to Avoid Adverse Review Decisions":

> The key to avoiding problems with the PRO is careful and complete documentation. Most risk management speakers stress the same need . . . in order to avoid legal problems. We as physicians accept this from a lawyer or a risk manager, but seem to bristle when the IFMC makes the same suggestions. We become even more aggravated if one of our own charts is criticized by a peer reviewer. If I have a choice, I would rather have a *peer* reviewing my charts than an attorney, or someone else outside the profession.

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Ionic and Non-ionic Contrast Media and Reactions

SHORTLY AFTER THE DEVELOPMENT of the x-ray examination it became apparent body cavities and hollow organs could not be visualized by the conventional radiograph. In the 1950s, the present day, reasonably non-toxic contrast media became available.

Three of the most commonly used products are Hypaque, Renografin and Conray. These products are tri-iodinated derivatives of benzoic acid. In the 50% solution, Hypaque is only sodium diatrizoate and Renografin 60 is a mixture of meglumine diatrizoate 52% and sodium diatrizoate 8%. Conray 60 changes the order of carbon and nitrogen atoms in the organic radical substituted in the 3 position of the benzene ring. The generic name for the compound is meglumine iothalamate.

Both the diatrizoate and iothalamate compounds have a carboxyl group in the 1 position on the benzene ring. At the 2, 4, 6 position iodine atoms are attached and at the 3, 5 position short chains containing carbon, oxygen, nitrogen, and hydrogen. These 3 contrast media products can be used interchangeably and will achieve the same radiographic results. The meglumine salts are less irritating than sodium salts to the arterial endothelium and are usually used for angiography.

All these products are supplied in 25%, 50% and 75% solutions. The 25% solutions have approximately 150 mg of iodine per milliliter (ml), 50% solutions have approximately 300 mg of iodine per ml and the 75% solutions vary from 370 to 400 mg of iodine per ml. The greater amount of iodine per ml, the more absorption of radiation by the iodine and the greater contrast in the x-ray film compared to surrounding tissues. Because of overlying body tissues there is frequently very little difference in contrast seen between the 50% and the 75% solution.

The recommended dosage of contrast media injections is variable. In excretory urography, one group advocates one ml per pound of body weight while another group advocates one ml per kilogram. The dose usually used in adult excretory urography is 100 ml regardless of weight with additional injections made in extremely obese individuals. In situations where multiple injections are given a maximum dosage of 200 ml has been set. In interventional radiography the maximum dosage is 5 ml per kilogram but this amount is rarely given.

The main concern is reactions to contrast media.[1] Minor reactions include hives, nausea and vomiting, rashes and mumps which is really a chemical parotiditis. Major reactions are pulmonary edema, asthma, cardiovascular collapse, respiratory collapse and death.

The mechanism of contrast media reactions is poorly understood and in all probability there is no simple answer to this perplexing problem. In spite of the fact some reactions appear to be allergic in nature, an antigen-antibody relationship has never been proven. Chemical structure of the various contrast media agents do not have an antigenic potential. The anxiety or emotional state of the patient has been implicated and may contribute to sensitizing the patient for a reaction. Rapid injection of contrast media produces a warm flush and a metallic taste. If the patient is not warned of these occurrences, they may

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TABLE 1

Generic Name	Molecular Weight	Acute Lethal Dose in Mice	PC*	Density 20°C, g/ml	Viscosity 37°C, mPa.s	Osmolality Osm/kg
Ionic monomer						
Diatrizoate	613	7.5	0.045	1.34	4.2	1.57
Ionic dimer						
Ioxoglate	1269	13.4	0.104	1.32	6.2	0.56
Non-ionic monomer						
Iohexal	821	24.2	0.070	1.35	6.3	0.67
Iopamidol	777	22.1	0.113	1.33	4.7	0.62
Plasma				1.05	1.2	0.3

* PC = partition coefficient in butanol and water at pH 7.6 and 0.01 mg/ml of iodine.

TABLE 2

	Total	Low-Risk Patients			High-Risk Patients		
		Mild	Moderate	Severe	Mild	Moderate	Severe
Ionic media*	3.65	3.22	0.24	0.09†	5.63	1.91	0.31
Non-ionic media‡	1.53	1.26	0.11	0	1.54	0.12	0.03

* Total ionic examinations: 46,262, ionic low-risk examinations: 45,304, ionic high-risk examinations: 958.
† Two deaths in this group.
‡ Total non-ionic examinations: 14,738, non-ionic low-risk examinations: 7,731, non-ionic high-risk examinations: 7,007.

be part of events which trigger the reactions. Passage of contrast media across the blood-brain barrier has been noted, but the dosage from intravenous administered contrast media would not seem to be sufficient to cause idiosyncratic reactions. Changes in red blood cells such as aggregation and deformation have been well documented and are thought to be caused by the hyperosmolar media. However, this type of involvement has not been demonstrated as a cause of severe reactions.

Bronchospasm and pulmonary edema may also occur when contrast media enters the pulmonary circulation. Maximum and medium excretory respiratory flow and forced excretory respiratory volumes are generally reduced during excretory urography and the question is whether subclinical bronchospasm and the occasional bronchospasm are manifestations of the same phenomenon. Pulmonary edema may develop rapidly or several hours after the examination. This condition has been observed in healthy adults and children without heart disease. The exact mechanism is unknown. Obstruction of the pulmonary capillaries by red cells and other toxic effects of contrast media have been implicated. Complement activation is another prominent theory as to the cause of these reactions. This very complex problem has been investigated by Lasser. The role of complement and histamine release reactions has not been completely explained and more investigation is needed.

How common are these reactions?[2] All adverse reactions to contrast media, including minor reactions requiring no treatment, occur in about 5% of those injected. Intermediate reactions, which require treatment but are not life threatening, occur in 1%. Severe life-threatening reactions requiring hospitalization occur in 0.05% of those injected or about one in 2,000 persons into whom the contrast media is injected. The most severe reactions, cardiac arrest and death, occur 0.017% and 0.0025% respectively.

In the last 4 or 5 years new contrast media have been introduced in this country. The non-ionic low-osmolar type of compounds are Ioxoglate (Hexabrix), Iohexal (Omnipaque) and Iopamidol (Isovue). Iohexal and Iopamidol are non-ionic monomers and Ioxoglate is an ionic dimer. (See Table 1.)[3]

These new products have reduced the reaction rate as noted in Table 2.

(Continued next page)

The use of the newer low osmolar contrast media is much preferred over products which ionize. Unfortunately, these new products are more difficult to manufacture and thus more costly than ionic compounds now in use. Both Iohexal and Iopamidol cost in the $50.00/50 ml range. Hypaque or Renografin costs approximately $1.80/50 ml. This increased cost has placed a tremendous financial burden on the health care industry.

At many institutions across the nation, specific groups of patients have been selected to receive the non-ionic low osmolar contrast media. At the University of Iowa, we have selected the following groups of high risk patients: all infants under 1-year of age, all patients who require sedation in order to perform the examination, all patients who have had a serious reaction to contrast media in the past and patients who are considered high risk.

In 1980 Lasser led a multi-institutional prospective study of the use of corticosteroids in alleviating the severity of reactions to contrast media.[4] One group was given methylprednisolone (Medrol, Upjohn) 32 mg oral tablet the evening prior to the scheduled contrast medium injection and another tablet was given 2 hours prior to the injection. The second group was given a single 32 mg Medrol tablet 2 hours prior to the contrast medium injection. Two other groups were given placebos in similar dosage regimes. The study was compared to a study conducted in Germany using a no pretreatment, non-ionic contrast media method.

The results of Lasser's study show pretreatment with corticosteroids at least 12 hours and 2 hours prior to the contrast medium injection will lower the reaction rate in all categories of reactions to those of the non-ionic contrast media group. Those patients who received a single dose of methylprednisolone 2 hours prior to injection of contrast medium did not show a reduction in the reaction rate. In the high risk group, (those with a history of any allergy or a previous reaction to contrast media) 1.5% of the methylprednisolone group needed treatment for reaction, 1.2% of the non-ionic group needed treatment for a reaction and 5.63% of those receiving ionic contrast media had reaction (Table 2).[3]

In conclusion, it would seem the use of corticosteroids at least 12 hours prior to an ionic contrast medium injection and again 2 hours prior to the injection would reduce the number of contrast media reactions.

For high risk patients use of this regime or the use of non-ionic contrast media would be equally satisfactory for preventing recurrence of serious reactions. Patients with active tuberculosis, diabetes mellitus or history of peptic ulcer may not be candidates for prednisone therapy and therefore should receive the non-ionic contrast media.

Using either of these methods in high risk patients still carries a small risk. Therefore, equipment and trained personnel to deal with these reactions must be readily available when the contrast media is used.

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1. Fischer, HW: Idiosyncratic reactions. *Radiographic Contrast Agents*, 2nd ed, Jovitas S. Skucas, ed. Aspen Publisher Inc., Salem, MA, 1989;139-56.

2. Spartaro, RF: Newer contrast agents for urography. *Radiologic Clinic of North America* 1984;22(2):365-80.

3. Morris, TW: Intravascular contrast media and their properties. *Radiographic Contrast Agents*, 2nd ed, Jovitas S. Skucas, ed. Aspen Publisher Inc., Salem, MA, 1988;119-28.

4. Lasser, EC, *et al:* Pre-treatment with corticosteroids to alleviate reactions to intravenous contrast material. *New England Journal of Medicine* 1987;319(14):845-49.

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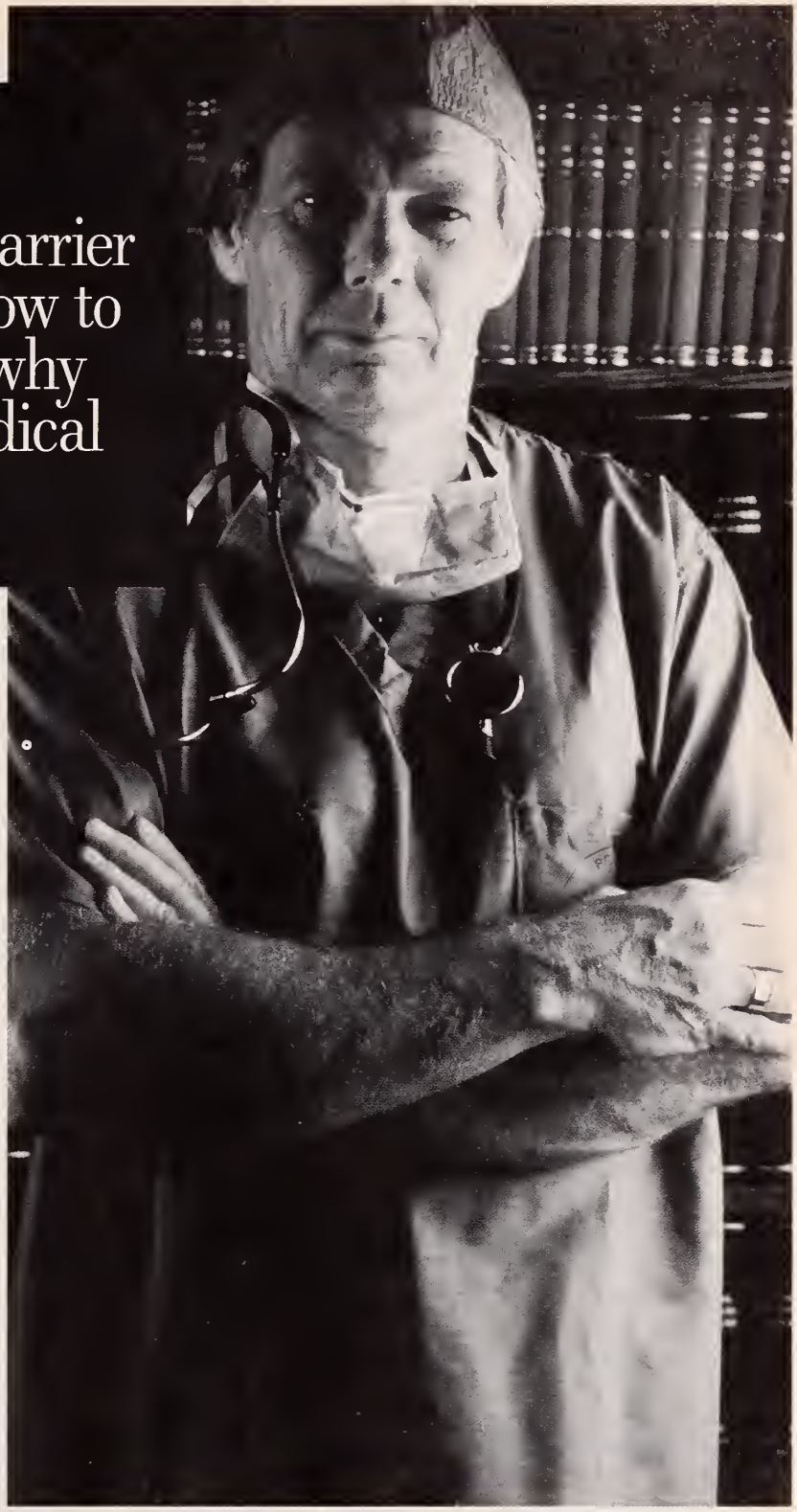
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Disability Prevention Program

THE IOWA DEPARTMENT OF PUBLIC HEALTH (IDPH) announces the creation of the Disability Prevention Program made possible by a grant from the Centers for Disease Control. The department's grant application was developed using the concepts contained in "The Iowa State Plan for the Prevention of Developmental Disabilities."

The plan was a project of the Iowa Governor's Planning Council for Developmental Disabilities. Its stated purpose was to construct a blueprint to guide legislative, executive, state agency, professional association and voluntary agency disability prevention activities in Iowa. The plan contains 4 components which focus on preconception, prenatal and perinatal periods; infancy and preschool years; later childhood and adolescence; and special considerations in Iowa. (Copies are available from Karon Perlowski at 515/281-7632.)

The 3-year grant seeks to build Iowa's health care capacity by: 1) creating an Office of Disability Prevention within the IDPH; 2) staffing this office with knowledgeable persons who will assist with coordinating and developing community-based programs; 3) creating an advisory body; 4) developing a disabilities surveillance and evaluation plan and; 5) planning and implementing community prevention projects.

Planning activities for 3 community-based projects will be implemented in Ottumwa and Marshalltown during the first year of the program. The first project in Ottumwa will be a coordinated program to prevent primary disabilities related to newborn risk factors — low birth weight, pre-term births, birth defects and cognitive motor and sensory disabilities. The goal of this program is to identify high-risk individuals and provide early intervention.

The second project will seek to prevent injury-related disabilities in rural settings. An expansion of the Iowa Agriculture Health and Safety Service Program initiated by the Iowa Legislature in 1987, this project will focus on preventing childhood disabilities caused by farm accidents, poisonings and related causes. The Marshalltown project will be coordinated with the Worksafe Iowa Program through the University of Iowa's Institute of Agriculture Medicine and Occupational Health.

The third project will be a coordinated system to prevent secondary disabilities during infancy and preschool years. This project, also based in Ottumwa, will seek to reduce the physical, psychosocial or environmental conditions associated with developmental disabilities in infants, toddlers and preschoolers. Also, the project seeks to mitigate the effects of these impairments through early detection and appropriate treatment.

Each of these projects and those yet to be developed will emphasize community-based planning and operation, coordination of existing state and local services, active involvement by public and private providers and participation by parents, consumers and other citizens. Each project will be enhanced by technical assistance and access to resources from the Iowa Department of Public Health and the University of Iowa.

For more information on the Disability Prevention Program, contact Roger Chapman at 515/281-6646.

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All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

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Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

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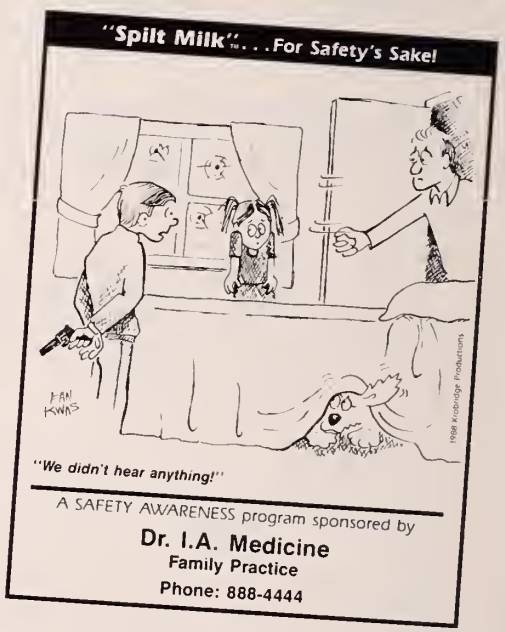


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BRIEF SUMMARY

CONTRAINDICATIONS
There are no known contraindications to the use of sucralfate.

PRECAUTIONS
Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS
Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE
There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION
The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED
CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:
1. Eliakim R, Ophir M, Rachmilewitz D: *J Clin Gastroenterol* 1987;9(4):395-399.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatic. It may have activity as an aphrodisiac.

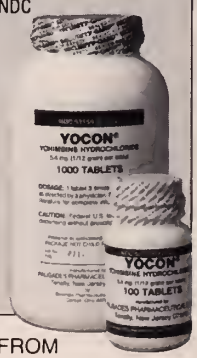
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Medical News/Products and Programs

ALIMENTUM® PROTEIN HYDROLYSATE FORMULA — Ross Laboratories, a division of Abbott Laboratories, recently introduced a new formula for infants who are sensitive to cow's milk and other proteins or who have difficulty digesting fat. The new product, Alimentum® Protein Hydrolysate Formula with Iron, is the result of more than 3 years of research and development by Ross, the maker of Similac® Infant Formulas, Isomil® Soy Protein Formulas and a full line of infant nutrition products. Most infants with allergies or sensitivities to cow's milk and other proteins are managed quite well on existing soy-based formulas, such as Isomil®.

Alimentum® is designed for babies who cannot tolerate a standard milk-based formula or a soy formula (1% or less). Alimentum® is available now in a ready-to-feed, liquid form. The formula will be promoted only to health care professionals. Babies allergic to ordinary milk proteins and to soy-based formulas are typically able to tolerate milk protein that has been broken down or predigested into smaller components, a process called hydrolysis. Generally, the more extensively hydrolyzed a protein, the less antigenic (allergy-causing) it is.

In addition to infants with protein sensitivity, Alimentum® is appropriate for infants with chronic intractable diarrhea, multiple food allergies, acute and chronic protein-energy malnutrition, carbohydrate malabsorption and galactosemia.

ULTRASHARP ELECTROSURGERY NEEDLE — A new tungsten alloy microdissection needle was recently released to market by the Federal Drug Administration. The Colorado Needle is a Bovie-type (monopolar) electrosurgery device featuring an ultrasharp point which permits more delicate and precise microsurgery at lower power than is possible using other electrodes. Only 5 to 10 watts of power are needed in the cutting mode. Therefore the tissue temperature rise one mm from the dissection plane is estimated to be no more than 5°C, resulting in faster healing and less scarring. The needles are supplied in various lengths, insulated or uninsulated. Contact Colorado Biomedical, Inc., 6851 Highway 73, Evergreen, Colorado 80439. Phone 303/674-5447 or 800/824-8454. Patent is pending.

ONCE-A-DAY ANTIHISTAMINE NOW AVAILABLE — Janssen Pharmaceutica, a Johnson and Johnson Co., announced recently Hismanal® (astemizole), a once-a-day antihistamine, is available by prescription. Hismanal® offers several advantages: 1) 24-hour allergy protection through once-a-day dosage; 2) effectiveness throughout the allergy season — Hismanal® does not lose its effectiveness over several weeks of therapy and 3) Hismanal® has been used for more than 20 million patient months, in 105 countries worldwide.

Hismanal®, an H-1 histamine antagonist, is a new antihistamine with no sedative effect greater than placebo. Animal studies show Hismanal® does not readily cross the "blood-brain barrier," a characteristic which may explain its lower incidence of sedative effects than the classical antihistamines.

Astemizole is indicated for the treatment of seasonal allergic rhinitis and chronic idiopathic urticaria. Hismanal® has not been studied in acute exposure to allergens.

TEST KIT FOR ANTIBODIES TO HTLV-I — Biotech Research Laboratories, Inc. has begun to market a Western Blot test kit for antibodies to HTLV-I (Human T-Lymphotropic Virus type I), a retrovirus that can cause adult T-cell leukemia and other neurological disorders. HTLV-I, believed to have an incubation period of over 20 years, is transmitted by the same means as retrovirus HIV (Human Immunodeficiency Virus) that causes AIDS, through transfusions of contaminated blood, sexual contact and sharing of hypodermic syringes.

Biotech has been jointly manufacturing the HIV ELISA test with DuPont since 1985 and received an FDA product license for the HIV Western Blot test in 1987. All of the company's HIV and HTLV-I tests are being marketed by DuPont to blood centers and clinical laboratories worldwide.

About Iowa Physicians

Dr. Ralph Congdon, a Davenport orthopedic surgeon, was recently honored by the Iowa High School Athletic Association for his service as a team physician for athletic teams in the Davenport school system for the past 16 years. **Dr. Douglas R. Koontz** has joined **Dr. Robert Jones** and **Dr. Randy Winston** at Neuro-Associates, Des Moines. Dr. Koontz received the M.D. degree from the University of Oklahoma College of Medicine in Oklahoma City, Oklahoma and also completed his residency there. He practiced in Enid, Oklahoma prior to locating in Des Moines. **Dr. Robert W. Clemons, Jr.** has joined Boone Medical Specialties. Dr. Clemons received the M.D. degree from the U. of I. College of Medicine and completed a residency in family medicine. Prior to joining Boone Medical Specialties, Dr. Clemons provided trauma and emergency services to Mercy Health Center in Dubuque. **Dr. Sidney Smith** has retired after a 33-year family practice in Oskaloosa. Dr. Smith received the M.D. degree at the U. of I. College of Medicine and interned at Sacramento County Hospital, Sacramento, California. **Dr. Ben Bagon** has joined the staff at Worthington Medical Center in Worthington, Minnesota. Dr. Bagon had practiced in Humboldt since 1971. **Dr. William A. Audeh** has retired after 25 years as a general surgeon in Cedar Rapids. Dr. Audeh received the M.D. degree from the Medical School, American University of Beirut, Beirut, Leba-

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non and served his residency at Creighton University, Omaha, Nebraska.

Dr. Henry Snead was recently elected to the American College of Physicians as a fellow. Dr. Snead is an internal medicine specialist with the Des Moines Medical Group. **Dr. F. Benjamin Merritt** has retired from Medical Associates Clinic, PC in Dubuque after 38 years as a pediatrician. Dr. Merritt received the M.D. degree at the U. of I. College of Medicine. **Dr. Larry Sellers** has joined the Internal Medicine staff in Sioux City. Dr. Sellers received the M.D. degree from the U. of I. College of Medicine and completed his residency at United States Public Health Hospital, University of California, San Francisco, California. Prior to locating in Sioux City, Dr. Sellers had been in private practice in San Raphael, California and served as chief of internal medicine at Ross General Hospital in Ross, California. **Dr. John M. Wall** has retired after 40 years as a general practitioner in Boone. Dr. Wall received the M.D. degree from the University of Tennessee Center of Health Sciences, Memphis, Tennessee. **Dr. John G. Ganske,** Des Moines, successfully completed the examination for Certification of Added Qualifications in Surgery of the Hand. **Dr. Darwin B. Jack,** Oelwein, has retired after nearly 38 years as a family practitioner in Oelwein. Dr. Jack received the M.D. degree from the U. of I. College of Medicine. Black Hawk County Medical Society officers for 1989 are: **Dr. James Crouse,** president; **Dr. Lawrence Liebscher,** president-elect; **Dr. James Young,** member-at-large; **Dr. Gary Phelps,** secretary and **Dr. Elias Jacobo,** treasurer. The following physicians were appointed as deputy medical examiners for Delaware County: **Drs. Herbert Gearhart** of Hopkinton; **Drs. John E. Tyrrell, John Weibel, Duane Caylor, Joanne Budi, Don Miller and Larry Severidt,** all of Manchester; **Dr. John Compton** of Edgewood; and **Drs. Brian Meeker and Craig Thompson,** both of Strawberry Point. Medical examiner is **Dr. R. Reid Boom,** Manchester.

Deaths

Dr. Byron L. Basinger, 90, Clarion, died February 28. Dr. Basinger received the M.D. degree from the University of Michigan Medical School, Ann Arbor, Michigan. He began family practice in Blakesburg, then moved to Goldfield where he practiced for 38 years. Dr. Basinger was a life member of the Iowa Medical Society.

Dr. William Bean, 79, Iowa City, died March 1 at his home. Dr. Bean received the M.D. degree from the University of Virginia School of Medicine in Charlottesville, Virginia. He was head of internal medicine at the U. of I. College of Medicine and chief physician at U. of I. Hospitals and Clinics from 1948 until his retirement in 1970. Dr. Bean was a member of the Association of American Physicians and the American Association for Clinical Nutrition.

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IT IS NOT WELL PUBLICIZED that Iowa hospitals provide nearly $100 million in "unsponsored care" every year or that these same hospitals are also very much involved in the public good outside the institution walls.

The Iowa Hospital Education and Research Foundation (IHERF) was founded in 1969 for the admirable purpose of undertaking research, education and demonstration projects that will enhance the delivery of health care in Iowa. Since the beginning, the emphasis was on health education and promotion; in the Foundation's 20th anniversary year, that emphasis continues.

This year, a major effort of IHERF is enhancement of the Iowa Hospital Association (IHA) library to make it the nation's premier library on rural health information. According to the American Library Association, the IHA's library has the most significant collection in the nation on this subject.

With assistance from Blue Cross of Iowa in the form of a $400,000 grant to IHERF, the current library collection has grown to over 3,000 books and monographs. Also, state-of-the-art computer and satellite links are managed by library staff. The rapid collection of the most comprehensive and recommended materials on rural health has been facilitated through contacts with the University of Iowa Health Science Library, state medical libraries and the National Library of Science.

To ensure the IHA library continues as a premier collection on rural health and a treasury of health administration information, IHERF has placed some of the Blue Cross grant in escrow. This interest will provide perpetual support for the library.

IHERF is also continuing development of the National Institute for Rural Health Policy. The National Institute was officially launched in 1986 by IHERF and the University of Iowa Center for Health Services Research. In August, 1987, the National Institute sponsored its first educational symposium on agricultural health and safety.

Last fall, IHERF's National Institute sponsored its second invitational conference on access to health care for rural Americans. Over 120 leaders in hospital associations, universities and public and private foundations attended to discuss problems in rural health care delivery and seek solutions.

Finally, IHERF administers several special funds. The James B. Seaman II Memorial Fund underwrites the Young Administrator's Achievement Award presented annually to an Iowa health care administrator under age 35 who has made significant contributions to health care in Iowa. The Cordes Keynote Lectureship was created in 1983 and provides funds for publishing and disseminating the lecture (the 1988 Cordes Keynote Lecturer was Uwe Reinhart, noted health care economist). Also, the Marc Ihm Memorial Fund provides support of the IHA Administrators' Fall Forum which ensures continued professional development for Iowa hospital administrators.

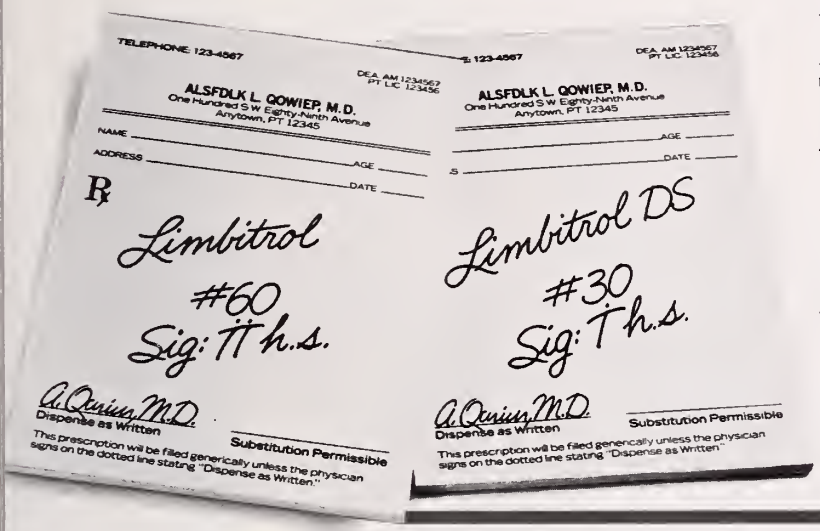
Clearly, Iowa hospitals are doing their part to enhance delivery of health care in Iowa and improve the quality of that care.

May 1989

Iowa Medicine

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References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner JP, *et al: Psychopharmacology 61:*217-225, Mar 22, 1979.

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***Usage in Pregnancy:* Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

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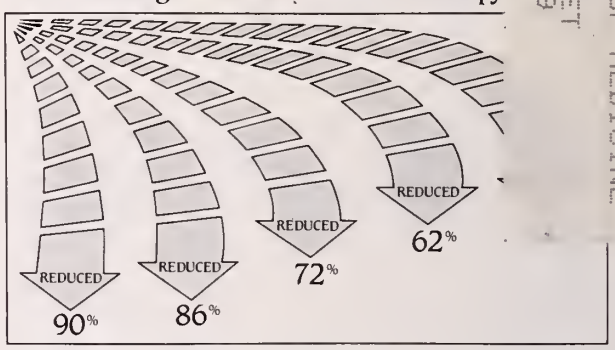
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IowaMedicine

June 1989

Journal of the Iowa Medical Society



RBRVS: Four Perspectives

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IowaMedicine

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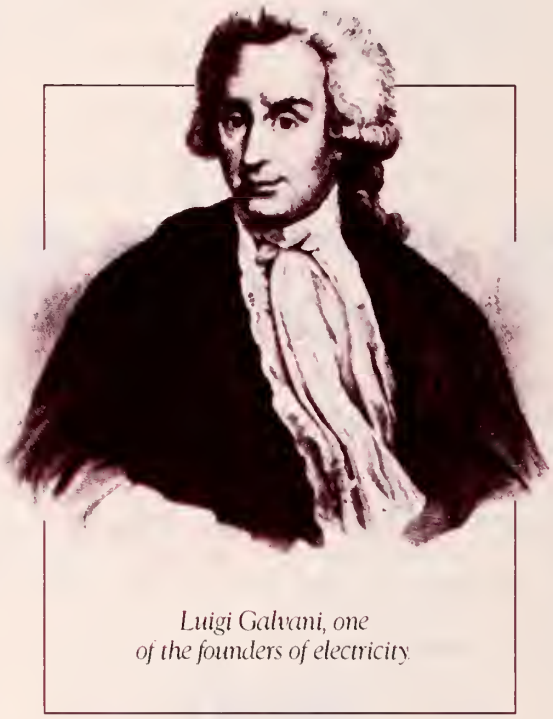
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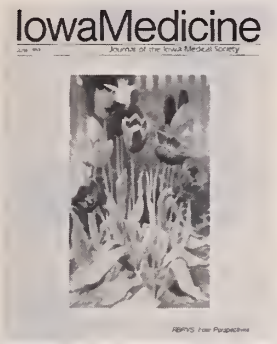
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About the Cover

This month's cover features a lovely (and seasonal) oil painting by Leonard Good entitled "Tulip Time." Professor Good, former head of the Drake University Art Department, was an Iowa artist from 1952-1977. He has retired to his native Oklahoma, but many of his pieces can still be found in Iowa art galleries. "Tulip Time" is owned by Tom Skogstrom of Minneapolis, a former student of Professor Good's.

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IOWA PHYSICIANS MUTUAL INSURANCE TRUST

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President's Privilege



Thoughts on RBRVS

In September 1988, a national study of a Resource Based Relative Value Scale for physicians' services was released by researchers at Harvard. It was funded by HCFA; the AMA was the subcontractor.

Concerns have been rigorously expressed by physicians all over America regarding the methodology and implementation of this Medicare reimbursement reform.

Many of us know we cannot afford the present Medicare system. The volume of physician services has increased dramatically the last few years. Increased compensation for office visits might reduce the number of procedures done in hospitals and RBRVS might reduce the large geographic and specialty disparities inherent in the present Medicare fee structure. I expect an increased office fee schedule to increase voluntary assignment, thus obviate the need for mandatory assignment legislation.

Since RBRVS has no geographic adjustment, we could anticipate an easing of the urban-rural differential — a leveling of physicians' fees which could alleviate rural access problems.

Any new system which affects how physicians are paid is threatening because we do not know the outcome. We should be heartened by the fact the AMA, through its cross specialty consultive panel, has thoroughly assessed the fairness and validity of the RBRVS results. Continued close scrutiny and communication by all of us through the IMS and AMA is essential.

We must remember we are all physicians whose responsibility is to provide quality care to patients at a price society can afford.

This month's *IOWA MEDICINE* focuses on the RBRVS. Inside, you will find an excerpted version of a panel discussion on the RBRVS held during the 1989 IMS Scientific Session in late April. The panel participants included the deputy director of the Physician Payment Review Commission, president of the American College of Surgeons, executive vice president of the American Academy of Family Physicians and our own Dr. Alan Nelson, president-elect of the AMA. As you can well imagine, their opinions on the RBRVS represent several points of view and make interesting reading.

This issue also contains a "Questions and Answers" feature by Dr. John Anderson, the Society's senior delegate to the AMA. Dr. Anderson discusses AMA House actions regarding the RBRVS.

This column is my first as your new president and I am anticipating a challenging year in office. I extend my best wishes to Dan Youngblade as he relinquishes this space to me, and I thank all my colleagues for their valuable support.

Donald F Rodawig MD

Donald F. Rodawig, M.D.
President

Cover Story

RBRVS: Four Perspectives

The new Resource Based Relative Value Studies (RBRVS) have raised many concerns and questions among Iowa physicians. For its 1989 Scientific Session, the IMS brought together 4 experts to discuss the implications for physicians of proposed Medicare payment reforms. Participants are: Terry Hammons, M.D., Washington, D.C., deputy director of the Physician Payment Review Commission; Robert Graham, M.D., Kansas City, Missouri, executive vice president of the American Academy of Family Physicians; Alan Nelson, M.D., Salt Lake City, Utah, president-elect of the American Medical Association; and Oliver Beahrs, M.D., Rochester, Minnesota, president, American College of Surgeons.

PPRC: Implement New Fee Schedule



Terry Hammons, M.D.

THE PHYSICIAN PAYMENT REVIEW Commission (PPRC) was created 3 years ago by Congress to advise on reforming Medicare reimbursement. Of 13 members, 6 are physicians. Dr. Oliver Beahrs was one of our original members. Our role is to develop proposals and present them to Congress. Today I'll tell you about proposals we'll make this year.

The first is that Medicare replace the current way of paying physicians with a fee schedule based on resource costs. Second, that balance billing be limited to some fraction above the fee, perhaps 15-35%. Third, that Medicare institute expenditure targets. Fourth, that the government support development of practice guidelines and support "effectiveness research" to help us improve care and live within the expenditure target.

There are several problems with the current system that these proposals are designed to address. First, we have an irrational charge structure. Many physicians believe what we pay for certain services — particularly the technical or surgical ones — is too high relative to what we pay for visits and consults. Second, the cost of Medicare is increasing more rapidly than we can afford. Third, it is clear a substantial fraction of services doesn't really benefit patients. Thus the willingness of Congress and the public to spend more on health care is undermined. I will explain each of our proposals beginning with the fee schedule.

A fee schedule is built from a relative value scale, a conversion factor and geographic multiplier. The relative value scale

we propose will be based on resource costs. Each relative value has 2 components: the value of the physician's work and practice costs. We will not include a separate factor for cost of training. We think the cost of training is already covered by paying more for the skill and knowledge required to do a service. We will have no specialty differential. A particular service will be paid the same regardless of the specialty of provider physician. Also, the schedule will include all physicians, including radiologists and anesthesiologists.

Our geographic multiplier will adjust for practice costs only and is not for cost of living. This will tend to increase fees in Iowa. If 2 physicians practicing in New York and Des Moines provide the same services they will receive the same net income. Fees will be higher in New York because expenses are higher, but there will be no adjustment for the fact it costs more to live there.

We will suggest improvements in coding of visits and consults by including the approximate time required in the description of each code. We will develop a standardized global service package for each surgical procedure. We will suggest balance billing be limited and the Participating Physician program continued as it is. Balance billing would then be limited to the 15-25% range. We suggest implementing the new fee schedule with a transition period of about 3 years.

What would be the impact of this fee schedule? Reimbursement for evaluation and management services — that is, visits and consults — would generally increase. Fees for most other services — surgical services and technical procedures like endoscopy and EKG — would decrease. Obviously, surgeons' practice revenues would tend to come down; fees of family practitioners' and internists' revenues would tend to come up. The geographic adjustment would generally increase fees in rural areas. If you're in New York City you're likely to see your fees decrease.

Internal medicine and family practice are projected to experience revenue increases of about 10-30%. Surgical specialties like ophthalmology, general surgery and orthopedics are projected to see decreases of about 10-20%. Otolaryngology and ob/gyn are projected to change very little. Pathology and radiology are projected to experience substantial decreases, perhaps of 20% or more. In small rural counties family practitioners and internists should see even larger increases in revenue from Medicare. In rural areas, all physicians on average will gain.

The balance billing limit, in the commission's opinion, is necessary to protect beneficiaries. If a new fee schedule were implemented without limits on balance billing, beneficiaries' balance billing could increase substantially. That's not acceptable to Congress or to the PPRC.

'How can physicians respond to these limits? By educating ourselves about what services are unlikely to benefit patients.'

Expenditure targets would be used to determine increases in the fee schedule. In theory, Medicare increases physician fees each year to compensate for inflation or higher malpractice premiums. Under expenditure targets, fee increases would be tied to expenditure growth. We recommend that Medicare start with a national expenditure target that includes all physician services. Later it could be refined to categories of services. The American College of Surgeons suggests surgical procedures should be separate. Separate targets would also be set for each state. That's appealing in Iowa because physicians here would probably be able to work together to control growth.

Expenditure targets are designed to give a collective incentive to the medical community. Nothing happens to an individual physician who increases the amount of services provided during the year, so there's no direct financial incentive for a physician to do less for patients. Instead, the incentive is on all physicians to respond constructively to the fact we cannot keep greatly increasing what we spend on medical care.

How can physicians respond to these limits? By educating ourselves about what services are unlikely to benefit patients. We

(Continued next page)

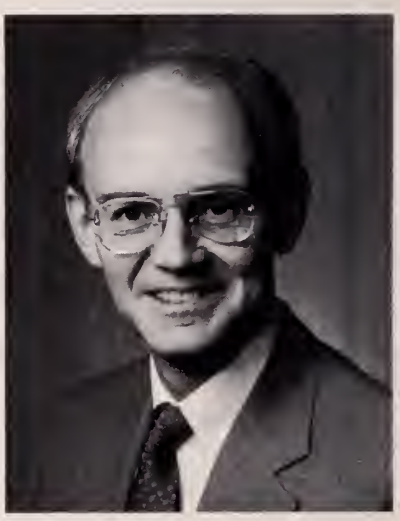
hope physicians will also cooperate more with Medicare in efforts to improve peer review so it becomes less arbitrary, better organized and better able to target unnecessary services. The federal government should provide more support for development of practice guidelines to help physicians know who really needs each service.

One hope of this commission is that by initiating expenditure targets, we can back away from some of the more intrusive utilization review programs and give the medical profession a chance to respond in its own way. The PPRC is aware that many physicians and professional societies are concerned about malpractice and antitrust. They say if they develop guidelines and get their members to use them the Justice Department and the Federal Trade Commission will come after them. We've begun to look into antitrust and we don't think there should be a problem for organizations like the AMA or the American College of Surgeons developing sound guidelines using a good open process.

Physicians may be reluctant to forego tests that might help prevent malpractice suits. We don't have an answer to the malpractice problem but we have told Congress this is a problem that must be addressed. We will look at it more in the coming year. — *Terry Hammons, M.D., Washington, D.C.*

To obtain a copy of the PPRC's 1989 report write to The Physician Payment Review Commission, 2120 L Street NW, Suite 510, Washington, D.C. 20037.

AAFP: Support For PPRC Proposal



Robert Graham, M.D.

THE ACADEMY OF FAMILY PHYSICIANS supports a revised physician payment system consistent with the principles of a resource based relative value schedule. We support the PPRC recommendation that we implement the changes within the next 2 or 3 years. The major objective is greater equity of reimbursement for physicians based on the resource cost of their skills and knowledge.

The present incentive and disincentive system has a marked influence on where physicians will practice. Under the proposed changes, it will be more financially feasible to practice in rural areas. This change in reimbursement will send a message throughout medical education. For the past several decades, we have gotten more people into narrower specialties and fewer people into primary care. We are not advocating that everybody be a primary care physician but we think we've lost balance. The RBRVS will help reestablish that balance.

We believe that under the PPRC plan, after 2 years, more than 50% of all physicians would be ahead in Medicare income. Fewer than 25% of physicians would have fluctuation of income from Medicare services greater than $1,000. There are projected horror stories of physicians in sub-specialties who will see a drop of $180,000 in Medicare revenues. However, someone who suffers that decrease would have to be billing Medicare in excess of $800,000 in the current fiscal year. We think the number of these physicians is relatively small. We believe the greatest good for the greatest number of physicians and patients exists in these recommendations.

We believe there should be no specialty or geographic differential in payment for services. We are in some disagreement with

the PPRC; they would maintain some degree of geographic differential although it would be less than the present time. We believe some data on which the PPRC based conclusions about cost differentials in different geographic areas may not entirely take into account differing practice costs.

In a perfect world, the Academy would advocate that there be no expenditure targets under this or any other plan. Unfortunately, the world is not perfect. We believe under an RBRVS it is not desirable to have a single national expenditure target. If there are problems with increasing volume and costs, we need to look at the categories or classes of services where volume and cost are the greatest, and have differential targets for those areas. If we have a single expenditure target and no other element of control of high volume high end procedures, all the money will pour into reimbursement for those procedures, the expenditure target will not be met and everybody will be cut. Therefore, we believe if expenditure targets are going to be used in an RBRVS, they must be used in a segmented fashion with specific targets laid out for certain classes of services.

Beneficiary protection, or mandated assignment, is also a sensitive issue. We believe there is a balance of policy objectives to be accomplished. Physicians would be comfortable if no one interfered in what was to be charged. However, those days are gone, particularly for Medicare. It is also desirable to implement means testing of beneficiaries. We do not believe all services should be free to all beneficiaries. We propose there be mandated assignment for services provided to Medicare beneficiaries at 2 times the poverty level or below. Above that, beneficiaries could be balance billed by physicians for services, up to 25% above the fee schedule.

We support the work the AMA is doing to help physicians and third party payers do a better job monitoring the system to make sure expenditures are appropriate. To see new policies implemented successfully, Congress has to hear from the physicians who believe these changes are more in the interest of patients and physicians than the present inequitable system. There must be an orderly but expeditious transition. We believe the information is available and the data mechanisms are available to make a transition in a 2-year period.

Most important, if we are going to have expenditure targets and limitation on balance billing, we're going to deal with a number of other issues. Simply putting a formula in place and then trying to ratchet down physician payments to reach certain budget targets is not acceptable or feasible. We believe the PPRC can be an intermediary for organized medicine and Congress in efforts to make appropriate determinations and recommendations. — *Robert Graham, M.D., Kansas City, Missouri.*

AMA: Maintaining Unity

THE AMA SUPPORTS THE HARVARD study if properly refined, expanded and corrected. It would be a fair and equitable schedule by which physician payments could be made in an indemnity system in which physicians have the right to set their fees. Payers have every right to determine what they will pay for a service. They do not have the right to tell me what I can charge for that service or to whom I may extend charity.

The essential difference between a schedule of payments and a fee schedule be-

(Continued next page)



Alan Nelson, M.D.

comes lost if you incorporate mandatory assignment, regardless of where you put that level of eligibility. You may say, for instance, that physicians must accept mandated assignment for everyone under twice the poverty level. Then that schedule is no longer a schedule of payments with the right

'Unity of purpose is going to be more important for this profession than it has ever been. The question is not one of winners or losers. I don't believe the winners are going to win as much as they think or the losers lose as much as they believe.'

of the physician in an indemnity system to determine what he or she will charge. It becomes a fee schedule with the physician required to accept that payment. That is an important distinction.

I commend Dr. Hammons and the other PPRC members for identifying the problem areas in the Hsiao study and making efforts to correct those errors. Specialties are being resurveyed, technical consulting groups are being listened to more closely and I have some optimism that PPRC will find a rational way of constructing the schedule by which physicians can be paid.

There is one word we have to remember and the word is unity . . . unity of purpose. I don't think many understand what's meant by an expenditure target. In my view, it is even more onerous than a cap. The AMA has said expenditure targets are implicit rationing. It would mean allocating a certain amount for Part B payments and, if that amount was exceeded, the conversion factor in that fee schedule would be lowered. Your payments would be at risk if the volume of services you provide increases the following year.

In my view, expenditure targets create a conflict of interest with the incentive for us to underserve. The only thing worse than one expenditure target is 2 — one for surgical services and one for other services. Our surgical colleagues who feel they can negotiate a better deal within a separate expenditure target are making a big mistake. The Canadian experience with expenditure targets is real and telling. In Alberta, for example, the last negotiations for physician fees had an approximate 3% update in the fee schedule with a .5% drop if total expenditures went above a certain point. There was also an incentive to limit the number of new physicians entering the system.

Another point I wish to make is that voluntary Medicare assignment is working. The AMA recommends that we consider the financial circumstances of our patient and decide whether that person should receive acceptance of assignment. Ninety-one percent of physicians accept assignment selectively, 81% of charges last year were on an assigned basis and 34 states have voluntary assignment programs. We have 200,000 millionaires who are Medicare recipients and I fail to see why I should charge them less than I charge the working person. It's an equity issue. I can resist mandatory assignment because it isn't fair to continue an intergenerational transfer of debt. It isn't fair to poor patients not to have those who can easily do so pay the usual fee.

Obviously, we must deal with the volume of services problem, but I don't think an expenditure target is the answer. The way to deal with the problem of unnecessary care is to identify what's unnecessary. It's not always easy to know ahead of time what is going to be necessary. When I'm uncertain, I want to err on the side of safety. However, we know there are geographic variations in the volume of services provided by physicians. We also know there is an optimal range and it's up to us to find it. That's where parameters of care guidelines represent an obligation the profession must meet.

Unity of purpose is going to be more important for this profession than it has ever been. The question is not, in my view, one of winners or losers. I don't believe the winners are going to win as much as they think or the losers lose as much as they believe. We will all lose if we permit government to split us and convert medicine into a public utility. Those who follow us in this profession and our patients will lose as well. — *Alan Nelson, M.D., Salt Lake City, Utah.*

ACS: Alternative Proposal



Oliver Beahrs, M.D.

I WAS FORTUNATE TO SIT on the Physician Payment Review Commission for 2 years. This group is dedicated and is functioning in a sincere way. Hopefully any legislation that comes from Congress based on PPRC recommendations regarding physician reimbursement will be acceptable to physician groups.

I will make general comments and then refer to the Harvard AMA study carried out under the direction of Professor Hsiao. I will discuss an alternative proposal made by the American College of Surgeons. The College did not participate in the Harvard study for several reasons. It did not object to surgical specialties doing so.

I think the basis for the College's nonparticipation is well recognized now that the Hsiao study is public. The AMA says when sufficiently expanded, corrected and refined, the study might be an acceptable basis for a fee schedule. I think from the AMA's statement it is obvious they're concerned regarding the methodology and data as originally reported. As Dr. Hammons said, the PPRC has been concerned regarding the Hsiao study and is using and revising the data and getting its own information regarding certain factors which will alter the Harvard RBRVS considerably.This will probably result in an RVS which will be different than the Harvard study and change the projections made by Dr. Hsiao.

Issues of concern to the American College of Surgeons and not addressed by the Harvard study include value and benefit of the service, severity of illness, volume and intensity of services and multiplier or conversion factors to determine the fee schedule. Also, time in providing the service was weighted too heavily. It was inappropriate and unfortunate that Professor Hsiao made fee projections and comparisons from the RVS which perhaps would have been best left unsaid until there could be further discussion and multipliers were arrived at which would have established the fee schedules. Also, competency and qualifications of the physician were not considered.

There are those who feel strongly that Medicare patients should not be exposed to increased costs, but I think in some cases the Medicare population is in a better position to pay in part health care costs than 25 to 44-year-olds. It is bothersome that clear definitions were not established regarding what was being studied in the Harvard study. Pre and post operative services were not considered. The PPRC and others recommend professional liability costs be considered as a separate factor. There is a wide differential among surgical specialties and geographic areas.

The College did not endorse or think appropriate that service be divided as cognitive or procedural. There is no more intense period of cognition than during a procedural service whether it's done by an internist or a surgeon. The College had the option to do nothing or develop a proposal with surgical specialty societies. The latter has been done and the proposal was just presented to the PPRC and congressional committees.

The College proposal has 4 major parts:

1. Control costs and volume using surgical target amounts. This contrasts with the PPRC recommendation for a national target.
2. Protection of the same groups within the Medicare beneficiary population against excessive costs. Accepting assignment for those below a determined financial capability and those who cannot pay for health care (patients with emergency conditions).
3. A blended fee schedule including supply side (RVS) and demand side factors.
4. Implementation over a 6-year period.

This plan is suggested by the College for surgical services only. — *Oliver H. Beahrs, M.D., Rochester, Minnesota.*

John R. Anderson, M.D.

Questions and Answers



RBRVS: A Delegate's Perspective

The author, a senior IMS delegate to the American Medical Association and a family physician in Boone, discusses AMA action on Medicare physician payment reform.

Please give us a brief history of Harvard Study of Resource Based Relative Value Scales (RBRVS).

The RBRVS is one of the growing list of Medicare physician payment "reforms" being considered by Congress and the President. The Harvard study was a response to a congressional mandate to the Secretary of Health and Human Services to develop a relative value system based on resource costs of providing physician services. It is funded by Health Care Financing Agency (HCFA).

The Harvard RBRVS report is the first phase of a study submitted to HCFA in September 1988 covering 18 specialties. The second phase will extend to another 15 specialties. The secretary of HHS must report to Congress in July 1989. The Physician Payment Review Commission (PPRC) 1988 report stated support for an RBRVS, but not specifically the Harvard RBRVS, to reform the Medicare physician payment system. The forthcoming PPRC and HHS reports could lead to legislation directing implementation of an RVS-based payment system in 1991 or 1992.

What is the purpose of an RBRVS?

An RBRVS is a list of physicians' services ranked according to a "value" in nonmonetary units. In an RBRVS based on resource cost and relative values, fees are determined by relative costs of resources required to provide physician services. Harvard's method of measuring resource costs includes the physician's work before, during and after providing a service; relative specialty practice costs; and costs of specialty training. Physician work was further defined as comprising time, technical skill, physical effort, mental effort, judgment and stress.

Discussion of the RBRVS dominated the June, 1988 AMA House of Delegates. What was the general reaction?

The report on the first phase of the Harvard study was released in September 1988. The AMA Board of Trustees assessed the studies, methods and results, established a task force to review the RBRVS and convened a meeting of state and county associations and national specialty societies. Report AA presented results of the Board of Trustees evaluation of the Harvard study and discussed potential uses of the Harvard RBRVS. Findings from the Board's assessment, the Task Force and the meeting of the state and county representatives and specialty societies were reflected in Report AA.

Over 100 physicians gave testimony in a special one and a half day Reference Committee Hearing prior to the December House of Delegates. A number of amendments to the Board's original recommendations were adopted. After considerable discussion, the House voted unanimously to adopt Report AA as amended and called for the Board of Trustees to report on further developments at the June, 1989 Annual Meeting or sooner. It is important to note the House of Delegates adopted the Board of Trustees Report AA and not the Harvard report per se.

Three policy statements were contained in Report AA: 1) reaffirmation of AMA support for a fair and equitable Medicare indemnity payment schedule based on an appropriate RBRVS and monetary conversion factor under which physicians determine their fees and Medicare establishes payments; 2) the Harvard RBRVS study and data, when sufficiently expanded, corrected and refined, is an acceptable basis for such a payment system; and 3) a mandate for the AMA to work with Harvard, specialty services, the PPRC, HCFA, Congress and others to ensure the technical adequacy of the final RBRVS.

Do you believe the Harvard RBRVS will be the tool by which physician reimbursement will be determined?

I believe the AMA will seek to move medicine away from the complex and arbitrary regulations of the current Medicare payment system toward an approach based on resource costs of providing physician services. The current Harvard RBRVS is a starting point for such a system and the AMA will work with others involved in payment system reforms to ensure an acceptable final RBRVS. I firmly believe the RBRVS physician payment approach is superior to DRG's or capitation.

How can physicians, particularly those in organized medicine, best respond to the RBRVS?

Report AA will not be the final word on RBRVS and its implementation. In Report AA, the House of Delegates has adopted positions on a number of key issues in development of a new Medicare physician payment system. Adoption of the report will enable the AMA to play a central role in policy debates on Medicare physician payment reforms. The report explicitly states a great deal of work must be done before a final RBRVS can be implemented. Any physician payment system which is adopted will first be massaged by PPRC, HCFA and even the Congress.

All physicians — and especially those in organized medicine — and the AMA will need to expend every effort to ensure a technically adequate RBRVS and its appropriate use in any new Medicare indemnity system. It is equally important any payment reform not divide the house of medicine. We must stick together.

LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

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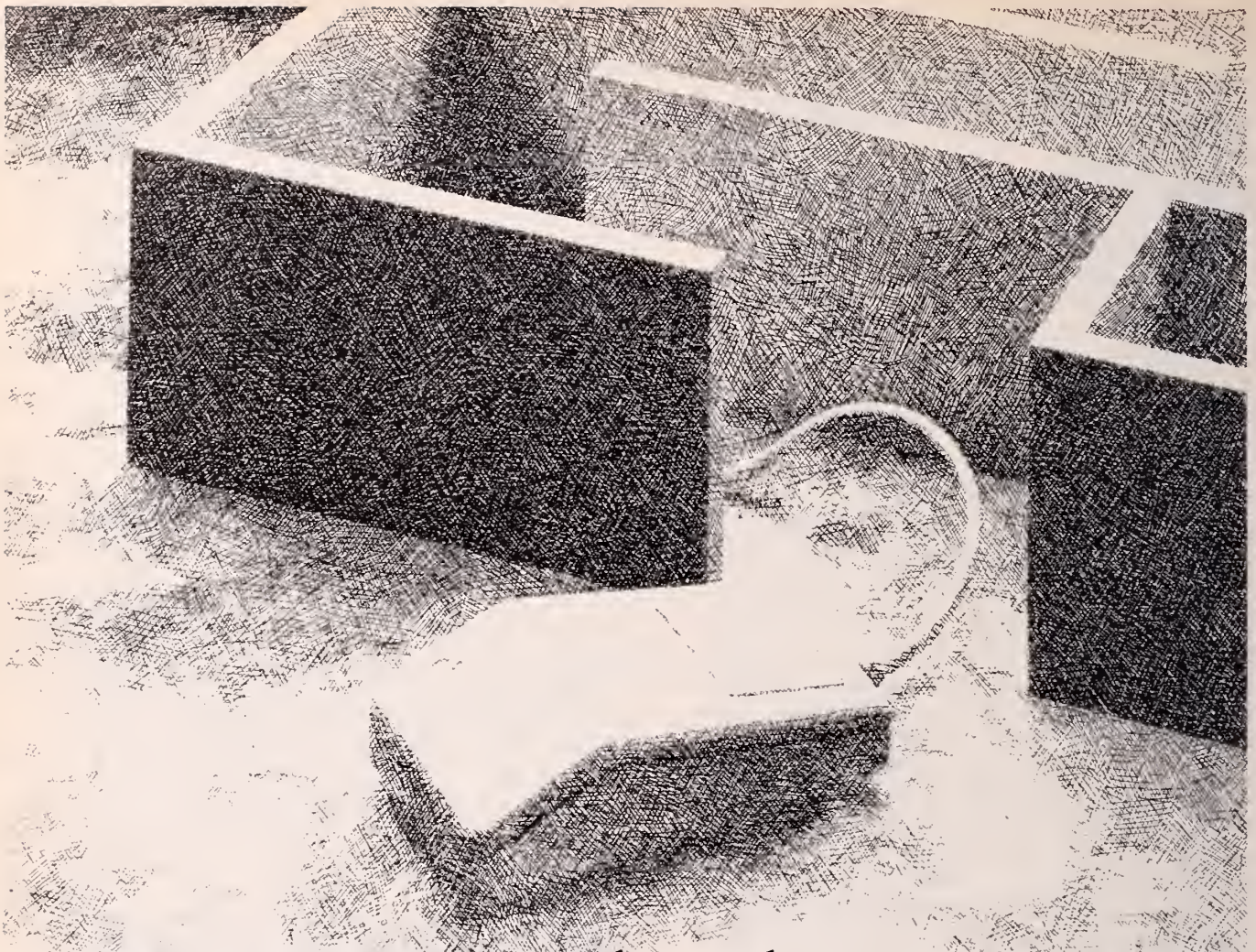
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Fulminant Refractory Lyme Disease

PAUL G. MANNING, M.D.
Clinton, Iowa

Lyme Disease, which is carried by ticks, has not been widely reported in Iowa but does occur here. The author discusses a case which involved most of the classic landmarks of the various stages of the disease.

LYME DISEASE WAS RECOGNIZED in 1975 when an epidemic of oligoarthritis occurred among children and adults in Lyme, Connecticut. Because many victims remembered being bitten by a tick before the onset of symptoms, it was felt this disorder was an infectious tick-borne disease.

In 1982 Drs. Burgdorder and Borbour of Rocky Mountain Laboratories cultured spirochetes from the mid gut of the tick, Ixodes dammini. Their studies revealed that serum from patients with Lyme disease contained antibodies against this organism. The organisms (spirochetes) were cultured from patients with Lyme disease, confirming that Lyme disease was caused by a spirochete.

Lyme disease initially occurred predominantly in the eastern coastal regions but is now nationwide. It has been reported frequently in Wisconsin and Minnesota and has now been found in the far west and Pacific states. However, the disease has not been well reported in Iowa and at this time is still considered a reportable entity.

It has been believed it is only possible to contract Lyme disease in an area with a large deer population. A recent article by Falco reports 50% of ticks from a lawn in a New York City suburb were found to contain causative spirochete.[1] The case presented here occurred in the summer of 1988 and presented as a fulminant case of advanced, stage I disease. In spite of therapy considered optimal, this patient progressed into stage II with impressive cardiological findings. Fortunately, the patient responded to high dose Ceftriaxone therapy combined with short course Prednisone.

Case History

The patient, a 62-year-old white male, complained of fever, diffuse polyarthralgia (involving ankles, knees, wrists) and neck stiffness. He had noted arthralgia and a low grade fever for 3 weeks. He was treated with Erythromycin, then Ceclor. The polyarthralgia and fever became more severe and neck stiffness developed 3 days prior to presentation.

Dr. Manning specializes in pulmonary diseases and practices in Clinton, Iowa.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR JUNE 1989

His past medical history and review of systems were unremarkable. Initial examination revealed a fever of 102° and swollen ankles, wrists and knees. Neurological exam demonstrated a Kernig's and Brudzinski's sign. A diffuse, deep, red rash covered his back.

Admitting laboratory work revealed the erythrocyte sedimentation rate elevated at 60%, a normal white cell count, a hemoglobin of 9.7 gm% and a hematocrit of 27. Blood cultures were negative. Urinalysis was normal. Chest

'Stage III of Lyme disease occurs in about 60% of untreated patients. Its onset can vary from 6 weeks to several years. Its main symptomatology is arthritis of the large joints, particularly the knees.'

X-rays showed old granulomatous changes. X-rays of the involved joints demonstrated mild degenerative changes. The electrocardiogram was normal. Synovial fluid analysis demonstrated no bacteria or crystals, a pH of 8.5 and a cell count of 71,000 (41,000 white cells, 95% segmented and 5% lymphs). Spinal fluid cell count was invalid because of a traumatic tap. CSF glucose was 55 and protein 44. Rheumatoid factor was negative, ANA titers were negative, C-reactive protein was positive at a level of 14.5 ml/dl. VDRL was nonreactive in the serum and spinal fluid. The synovial fluid Lyme disease titer was 1:80. The serum Lyme disease titer was 1:320.

Initial medication was a combination of Cefotaxime, Tobramycin and Nafcillin. A blood transfusion was performed because of incidental apparent upper GI blood loss.

Two days after admission his back rash intensified. A Jarisch-Herxheimer reaction was considered but to rule out antibiotic allergy, the patient was switched to Vancomycin and intravenous Tetracycline.

Due to increased PVC's, he was transferred to ICU for monitoring. A bone scan was negative. The patient then began to improve. His rash and his arthalgia slowly abated. Because of positive hepatic enzymes with elevation of transaminases, LDH and alk. pos., a liver CAT scan was obtained. It was normal.

On Day 19 the patient's arthralgia had improved and his rash started to abate. He was sent home on oral Tetracycline, Zantac and a tapering course of steroids.

Four weeks later, despite continued administration of Tetracycline, the patient returned with increased polyarthralgia, nodal cardiac rhythm and anemia. He was placed on Ceftriaxone 2 gms. IV q12. Blood cultures were normal. A repeat echocardiogram was normal. Lyme disease serology was 1:16. A tapering 2-week course of steroids and intravenous Ceftriaxone was initiated.

On the regimen of combined Ceftriaxone and Prednisone, the patient's nodal rhythm reverted to normal sinus rhythm in 24 hours. The patient also developed a recurrent ulcer and GI bleeding which again required a transfusion.

The patient's hospital course was unremarkable until Day 15 when he developed a fever and vague abdominal pain. Workup included a barium enema and IVP which were normal. Ceftriaxone was discontinued on Day 17 and the patient had no further fever. Another echocardiogram was done and was essentially negative. Another liver CAT scan was negative.

Thereafter, the patient remained afebrile with no further problems and was discharged on Day 20.

Discussion

This case is interesting because the patient initially presented with what appeared to be fulminant "stage I" disease, in what is usually considered a triple stage disease.

Stage I normally occurs about one week after a tick bite, although the incubation period can extend 3-33 days. Most patients appear toxic and complain of fever with severe fatigue and lethargy. Other signs and symptoms include sore throat, myalgia, nausea and vomiting, headache and stiff neck. The classic, additional physical finding is the characteristic rash which has been termed Erythema chronicum migrans (ECM). It usually occurs initially at the site of the tick bite in an annular configuration and then expands. As the lesion grows, multiple concentric rings or other annular lesions may occur. The size of ECM can be as small as a few centimeters, as large as 70 centimeters in diameter or involve an entire area. Other variations reported include an ul-

cerated and vesicular center. The center of the rash may become intensely erythematous and indurated.

If a patient is untreated, usually a single ECM rash becomes disseminated. The palms, soles and mucous membranes are usually spared. If patients are treated, ECM and secondary lesions may fade within days. In untreated patients, they usually last 10-14 days but may persist for months and recur even one year later. Minor neurological symptoms are also believed to occur within this stage and can include headaches, neck pain and stiffness and various musculoskeletal symptoms including pains in tendons, muscles, etc.

Untreated patients progress to stage II in approximately 3 weeks. Its range extends 4-80 days. The 2 systems most affected are cardiac and neurologic. As reported by Steere and colleagues, the most common cardiac manifestation appears to be a high degree AV block, although supraventricular tachycardia and significant bradycardia have also been noted.[2] Patients can also develop diffuse cardiac involvement typified by EKG changes of diffuse T wave flattening or inversions, ST segment depressions and other nonspecific intraventricular conduction defects and PVC's. It was noted with remissions, EKG's in all patients returned to normal. Several patients in this series developed reduced left ventricular ejection fractions and pericardial effusion. After therapy the ejection fraction increased to normal.

Classic neurologic symptoms can include aseptic meningitis, cranial palsies (particularly Bell's palsy) and peripheral radiculoneuritis.[3] A significant portion of those patients who develop signs of meningitis may also develop signs and symptoms of encephalitis including lethargy, difficulty in concentration, irritability and poor memory. The duration of these symptoms varies. (Figure 1.)[4]

Peripheral radiculoneuritis involving the upper extremities, with loss of muscle strength and deep tendon reflexes has also been commonly reported.[5] It can involve thoracic dermatomes resulting in belt-like distribution of pain or numbness.

Stage III of Lyme disease occurs in about 60% of untreated patients. Its onset can vary from 6 weeks to several years. Its main symptomatology is arthritis of the large joints, particularly the knees. Other joints reported to be involved include shoulders, hips, elbows, ankles and wrists. Attacks of arthritis may recur for many years. Ten percent of patients with arthritis develop chronic destructive disease which includes erosions of cartilage and bone. Analysis of the joint fluid reveals elevated protein levels (3.6 to 5.7 gm/dl) and white cell counts vary between .5 to 77 $\times$ 10^3/ml sq., containing predominantly polymorphonuclear leukocytes. Radiologic findings of joints demonstrate evidence of effusions, soft tissue swellings. Calcification or thickening of various knee ligaments is possible. Bony changes include articular erosions and osteoporosis or degenerative involvement such as osteosclerosis and osteophytosis.

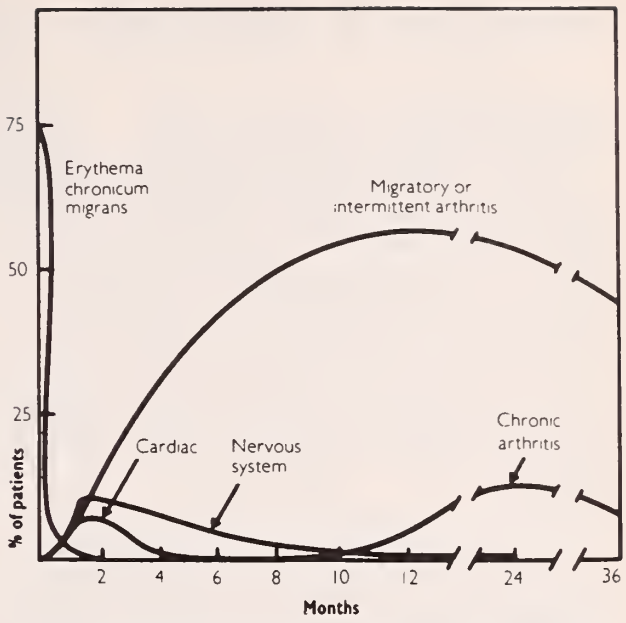


Figure 1. Time course of Lyme disease manifestations. Courtesy of the Centers for Disease Control, Atlanta.

Diagnosis

The specific diagnosis of Lyme disease is difficult. Isolation of the causative organism from "infected" sites is extremely difficult and often unsuccessful. The best method is serologic antibody titers, either by immunofluorescence or immunosorbent assay (ELISA).[6]

The specific IgM response in patients with "minor" manifestations such as a small ECM rash may not be detectable early in the disease. Generally, as the patients became more toxic their levels will rise and peak in 3 to 6 weeks.

(Continued next page)

They may remain elevated for months after initial diagnosis.

Treatment

Stage I Lyme disease can be treated with penicillin, Tetracycline or Erythromycin. Although initially penicillin and Tetracycline were found to be generally more efficacious than Erythromycin, most physicians recommend Tetracycline, 250 milligrams 4 times a day for at least 14 days, continuing therapy until 20 days or one month if symptoms persist. Children under age 8 with stage I Lyme disease should be treated with penicillin G or Erythromycin.

For patients with stage II Lyme disease, (i.e. cardiac and neurologic abnormality) intravenous penicillin is recommended, utilizing penicillin G at a dose of 4 million units IV every 4 hours for at least 2 weeks. Intravenous or oral Tetracycline has also been utilized in this stage for a full 4-week period. For patients with high degree atrial ventricular block or mild pericarditis, 3.6 gm/day of aspirin or 40 to 60 milligrams a day of Prednisone have also been given. In a case reported by Steere et al, Prednisone was bolused and tapered 5 to 10 milligrams per week, continuing therapy for 2 to 4 months due to recurrent nervous system or joint symptomatology. It should be noted that in patients who have failed therapy, prolonged Prednisone therapy was involved.

For patients with severe Lyme arthritis, parenteral penicillin has a 40% response rate. In patients with refractory arthritis, Ceftriaxone at high doses of 2 grams every 12 hours for at least 2 weeks has been utilized.[7] In geographic areas heavily infested with infected ticks, a case could be made for prophylactic therapy in patients who report a definite tick bite. Periodic examinations of the serum for B. burgdorferi titers would also be indicated.

Summary

This case contains most of the notable landmarks of the stages of Lyme disease (Figure 1). Initially this was a difficult diagnostic situation because the patient lived in an area that has not had an incidence of Lyme disease. Also, the patient did not respond to the "conventional antibiotics" (Erythromycin and Cefaclor) and presented with a fulminant toxicity. After hospital admittance and antibiotic treatment, he demonstrated the classic Jarisch-Herxheimer reaction (which can occur in up to 15%) which initially was thought to represent antibiotic allergy.

The next noteworthy aspect of this case was it did not respond to the recommended antibiotics for stage I Lyme disease (Tetracycline). The patient was readmitted and received high dose Ceftriaxone and Prednisone due to cardiac manifestations. To avoid refractory resistant Lyme disease, Prednisone was rapidly tapered in a 2-week course.

Near the end of the second hospital stay, he demonstrated what might be considered a "drug fever" and an interesting nonspecific abdominal pain which has been reported upon prolonged use of Ceftriaxone (it is believed to be due to "gallbladder sludging"). In short, Lyme disease, although not frequently reported in Iowa, appears to be a disease entity which should be considered in individuals with diffuse arthritis and possible history of rash.

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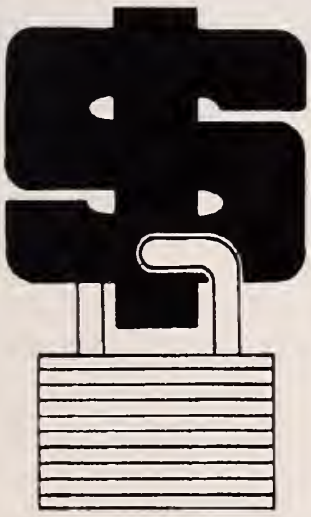
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The Case of the Painful Buttock

JOHN I. GOTCHALL, M.D.
ROBERT L. SCHELPER, M.D.
ROBERT L. RODNITZKY, M.D.
Iowa City, Iowa

A 63-YEAR-OLD MAN with a right seventh cranial nerve paresis was admitted to the hospital 4 months after developing anorexia, weight loss and right buttock pain associated with diminished urinary stream. A transurethral prostate resection performed after several courses of empiric antibiotics for prostatitis showed nodular prostatic hyperplasia and focal noncaseating granulomatous prostatitis. The buttock pain worsened, radiating to the right testis. Progressive anorexia resulted in a 40-pound weight loss. Constant right-sided, dull, frontoparietal headaches developed. An extensive evaluation in Florida was nondiagnostic.

An upper gastrointestinal barium study showed small antral ulcerations. The symptoms persisted despite outpatient management with an antiulcer medication, bedrest, stool softeners and low dose opiates. The patient was admitted for nasogastric alimentation and definitive evaluation.

Past history included a first lumbar vertebral compression fracture resulting from a boating accident 7 years previously, a right herniorrhaphy 4 years earlier and a left peripheral seventh cranial nerve paresis in 1962. The patient was recently retired from managing a service station, had discontinued cigarettes 6 months ago and consumed alcohol in moderation. A 67-year-old brother had been diagnosed with leukemia and a sister died of "bone cancer" at age 52.

Dr. Gotchall is with the Department of Internal Medicine, Dr. Schelper is with the Department of Pathology and Dr. Rodnitzky is with the Department of Neurology at the University of Iowa College of Medicine.

Clinical Findings

John I. Gottchall, M.D., Internal Medicine: Physical examination revealed a thin, ill appearing man. Temperature was 37.2°C, heart rate 80, blood pressure 90/60 mmHg and weight 66.5 kilograms. The skin was normal. There was no lymphadenopathy. Examination of the heart, lungs and abdomen showed only mild epigastric tenderness. The prostate was smooth and stool guaiac negative. Orientation was intact although short-term memory was limited to 2 of 3 objects. Interpretation of proverbs was concrete and serial 7 subtractions were limited. Eyelid strength was diminished bilaterally, more on the right than the left. Hearing was mildly diminished bilaterally. Muscle strength was full. Sensation was intact with no diminution in the area of pain. Pain was elicited by palpation of the right sciatic notch but not by straight leg lifting. Gait was normal and the Romberg test negative. Deep tendon reflexes were diminished at the ankles and the Babinski response was plantar.

White blood count was 4000/mm^3, hemoglobin 13 gm/dl and platelet count 274,000/mm^3. The electrolytes and SMA-12 were normal. The urine contained 3-4 wbc/hpf and was otherwise normal. The chest x-ray showed cal-

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cified granulomata and apical scarring bilaterally.

Zeta sedimentation rate was 52 mm/hr. A sample of cerebrospinal fluid (CSF) was clear with an opening pressure of 13 cm; there were 8 wbc/mm^3, predominantly lymphocytes, and 12 rbc/mm^3. The CSF protein was 114 mg/dl and the glucose 65 mg/dl. Plain films of the

'Untreated tuberculous meningitis is usually fatal within the 6-month course described here.'

lumbar and sacral spine confirmed the previous compression fracture of L1 and posterior narrowing of the L-5/S-1 disc space; no additional findings were discovered by magnetic resonance imaging (MR) of the brain, lumbosacral spine and abdomen. An electroencephalogram was consistent with mild diffuse cerebral dysfunction. Computed tomography (CT) of the brain with and without contrast enhancement was normal. Electromyography showed spontaneous activity in the muscles innervated by the right first sacral nerve. Nerve conduction studies revealed diminished velocity in multiple segments in both lower extremities.

There was no reaction to skin testing with purified protein derivative (PPD) and mumps antigen. Thyroid function tests, serum vitamin B12 and red blood cell folate levels were normal. Serology for the venereal disease research laboratory antigen (VDRL) and free treponemal antigen (FTA) was nonreactive. The angiotensin converting enzyme level was normal on 2 occasions. Serology for *Borrelia burgdoferi* and HIV was nonreactive. Serum protein electrophoresis and immunoelectrophoresis yielded nonspecific abnormalities. Barium enema, rigid sigmoidoscopy, cystoscopy, bone scan and computed tomography of the chest and abdomen were unrewarding.

An intravenous pyleogram showed a large post-void residual. Esophagogastroduodenoscopy revealed antral scarring without ucleration. CSF examination was repeated 4 times, each demonstrating increased protein levels, normal glucose, variable degrees of lymphocytic pleocytosis and uncharacterized but increasingly atypical cells. The CSF cryptococcal antigen was negative, cultures for mycobacteria were sterile, oligoclonal protein bands were not found and the CSF beta-2 microglobulin, carcinoembryonic antigen and beta-glucuronidase levels were normal. Biopsy of the right gastrocnemius showed severe neurogenic atrophy. A sural nerve biopsy demonstrated focal loss of myelinated fibers and Schwann cell collapse.

During this prolonged hospitalization there was progressive muscular wasting and 6 kg weight loss despite nasogastric feeding. Oral intake fell to 350 kilocalories per day. Nausea and intermittent emesis worsened. The right seventh cranial nerve paresis progressed, dysarthria developed, right ankle reflex was lost, there was pain with right straight leg raising and the gait became unsteady. Severe orthostatic hypotension developed. The patient remained afebrile except for an episode of pneumococcal pneumonia. During the eleventh hospital week, a diagnostic procedure was performed.

Clinical Discussion

Robert L. Rodnitzky, M.D., Neurology: This illness has 3 phases. The first occurred over 4 months and was characterized by persistent right buttock pain with radiation to the right groin, constant headache, a 40-pound weight loss, anorexia, nausea and fatigue. During the next phase, the patient was chronically ill and had a mild memory deficit, difficulty with calculations, poor abstract thought, bilateral eyelid weakness, decreased hearing and diminished ankle reflexes. Important laboratory studies included anergy to skin testing, a slightly elevated sedimination rate, a lymphocytic pleocytosis in the CSF and a markedly elevated CSF protein. Images of the brain with CT and the spine with MR were normal, but electromyography revealed denervation in muscles innervated by the first sacral nerve root. During the final 4 weeks of the illness there was further weight loss, progressive right facial weakness, dysarthria and ataxia.

What do those symptoms represent? The pain radiating into the right groin could result from ilioinguinal nerve disease, but lower sacral nerve root involvement is more likely because of the associated buttock pain, later development of a positive straight leg raising sign and the electromyogram results. The bilateral

eyelid weakness probably represents seventh cranial nerve involvement and hearing loss may represent eighth cranial nerve involvement bilaterally. Headache can be nondescript, but in a systemically ill patient one should always consider lesions causing a mass effect in the brain, increased intracranial pressure or meningeal irritation in the differential diagnosis. The unrewarding imaging studies and the normal opening pressure during CSF examinations argue against the 2 former causes of headache, while the persistent CSF pleocytosis suggests meningeal irritation. The late developing ataxia and dysarthria likely represents cerebellar dysfunction.

How can we anatomically explain this constellation of progressive cachexia, cranial nerve abnormalities, spinal root disease, headache, mild cognitive decline and cerebellar signs? Either a diffuse process such as vasculitis involved both the central and peripheral nervous systems, or involvement of a single pervasive anatomic structure such as the meninges produced changes in the subjacent cerebral and cerebellar cortex, and in spinal and cranial nerves as they pass through this structure.

Supporting a diagnosis of vasculitis, although nonspecific, is the persistently elevated erythrocyte sedimentation rate. Let us consider the spectrum of vasculitis affecting the nervous system. Isolated angiitis of the central nervous system affects primarily small vessels in the central nervous system. Although a CSF pleocytosis may be seen, the syndrome typically includes seizures, stroke-like episodes and prominent early behavioral changes rather than progressive cachexia and early spinal root involvement.

Wegener's granulomatosis can cause cranial nerve involvement, but this patient had no evidence of the typical respiratory tract abnormalities, glomerulonephritis or ulcerative lesions. Churg-Strauss syndrome and polyarteritis can produce mononeuritis multiplex, but usually are accompanied by eosinophilia and other organ, particularly pulmonary, involvement. Lymphomatoid granulomatosis and Bechet's disease are also unlikely, the former because of the absence of typical pulmonary and cutaneous involvement and the latter because of the lack of mucosal or genital ulcers.

Isolated necrotizing arteritis of the peripheral nervous system is a more serious consideration in this patient because it involves the peripheral nervous system in isolation and does not produce organ involvement elsewhere. In a recent series, the average age of onset was 61 years. Sixty percent of patients had spontaneous neurogenic pain, 44% had weight loss and 63% had mononeuritis multiplex.

At first glance, isolated necrotizing arteritis of the peripheral nervous system might explain many of the signs and symptoms presented today. When mononeuritis multiplex appears in this condition, however, it usually involves the peroneal nerve and has a precipitous onset, while cranial nerve involvement is rare and the CSF is usually normal. A peripheral nerve biopsy in necrotizing angitis of the peripheral nervous system almost always shows evidence of vasculitis. Thus, without signs of vasculitis outside the nervous system or evidence of vasculitis on nerve and muscle biopsies, a vasculitic process seems unlikely.

'There is argument about whether scar carcinomas actually arise in a scar or if they cause the scar.'

Tuberculous meningitis often concentrates at the base of the brain causing multiple cranial nerve abnormalities and may be difficult to diagnose since CSF acid-fast stains may be negative and patients may be anergic to PPD. Several features speak against tuberculous meningitis in this case, however. While the patient had a lymphocytic pleocytosis on multiple CSF exams, never was the typical low CSF glucose demonstrated and cultures for mycobacteria remained negative over several weeks. Untreated tuberculous meningitis is usually fatal within the 6-month course described here. Fungal disease is unlikely given the normal CSF glucose, negative fungal cultures and lack of predisposing condition. A strong point against a diagnosis of neurosyphilis is the nonreactive serology for VDRL and FTA.

Lyme disease is possible, if for no other reason than the bilateral seventh cranial nerve palsies, although radiculopathies and CSF pleocytosis may also develop. The classic his-

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tory includes a preceding rash characteristic of erythema chronicum migraines, but many patients with well-documented disease can't recall a rash. The feature that argues against Lyme disease is the negative serum antibody titer to the spirochete *Borrelia burgdorferi* during the course of a meningitic-neuritic illness. Although the antibody need not be present during early phases, once patients reach the meningitic-neuritic phase of Lyme disease, nearly 100% have a positive antibody titer.

Sarcoidosis, another systemic illness which should be strongly considered, involves the nervous system in approximately 5% of cases. Granulomatous meningitis may produce cranial nerve involvement, most commonly the seventh cranial nerve. In a recent review of neurosarcoid, however, virtually all patients also had non-neurologic stigmata of sarcoid disease. In the current case, anergy is the only systemic sign of sarcoidosis. Elevations of angiotensin converting enzyme are found in 60-85% of cases; the levels were normal on 2 occasions in the present case. Finally, a muscle biopsy in this patient showed no evidence of sarcoidosis. Even random biopsies of asymptomatic muscles show noncaseating granulomas in 50-80% of patients with sarcoidosis. For these reasons I consider sarcoid unlikely.

Could this represent a neoplastic disease of the meninges? Primary meningeal neoplasms such as meningioma are usually discrete but can rarely be diffuse. A diffuse form of primary leptomeningeal glioma arising from heterotopic neurolial tissue in the meninges has been described, but some pathologists dispute this entity, claiming the diagnosis cannot be made until a postmortem has excluded a small glioma arising in the neuroaxis and seeding the entire meninges. In any case, the tumor typically encases rather than infiltrates nerves, so spinal and cranial nerve symptoms are generally less prominent than in the case under discussion. Primary leptomeningeal sarcomatosis can also present with cranial nerve or spinal root involvement. However, the early cachexia and weight loss speak against this primary leptomeningeal tumor.

Several brain tumors, including gliomas, ependymomas, medulloblastomas, germinomas and primary lymphomas of the central nervous system may seed the CSF with cells capable of implanting on the meninges anywhere in the neuroaxis. In those cases, however, you would expect to see the primary tumor on imaging studies which were negative in the current case.

Could this be a metastatic neoplastic meningitis arising from a primary tumor outside the central nervous system? Certain tumors

'Sarcoidosis, another systemic illness which should be strongly considered, involves the nervous system in approximately 5% of cases.'

metastasize to the parenchyma of the brain and to the meninges. In one large series of metastatic leptomeningeal cancers, the most common primary tumors in order of prevalence were breast cancer, lymphoma, lung cancer and melanoma. Usually meningeal metastases occur in association with parenchymal brain metastases, but in 2 large series approximately 5% spread to the meninges alone. In a large series reported from a cancer referral center, most patients were 40-60 years old. Eight percent presented with leptomeningeal metastases; 22% of those had no other metastases at the time leptomeningeal disease was identified. Cranial nerve involvement was found in 80% of patients; the cranial nerves innervating the extraocular muscles were the most commonly involved, followed by the seventh cranial nerve, eighth cranial nerve and optic nerve.

This patient clearly had involvement of the seventh and perhaps the eighth cranial nerve as well. Returning to that large series, while only 25% of patients with leptomeningeal carcinoma had symptoms relating to spinal root involvement, physical examination revealed signs of spinal root involvement in 80% of patients. At presentation, 40% of patients had headache and 50% had cognitive changes. Thus, the tetrad of cognitive changes, headache, cranial nerve involvement and spinal root involvement displayed in this case is quite typical of leptomeningeal cancer.

Instructive features of the course of leptomeningeal carcinomatosis are revealed in another series showing the time from the first symptom to diagnosis ranged from 2 weeks to 8 months with a mean of 2 months, not out

of the range for our patient. The presenting symptoms in that series were headache, leg pain and low back pain; cranial nerve involvement and cognitive changes were later manifestations. Ultimately, 90% of their patients had cranial nerve and spinal root involvement.

Let us examine how these symptoms are produced in leptomeningeal carcinomatosis. Cranial nerves and spinal roots are directly invaded as they pass through the subarachnoid space and through the involved meninges. The heaviest tumor concentration tends to be at the base of the brain and in the cauda equina. Explanations for the development of cerebral symptoms include: direct invasion of the brain parenchyma through the perivascular spaces around penetrating pial vessels; development of hydrocephalus from occlusion of the absorptive surface over the convexity of the brain by meningeal tumor; and ischemia or interference with the metabolism of the brain underlying involved meninges.

How is a clinical diagnosis of leptomeningeal carcinomatosis confirmed? CT may show enhancement of the meninges or ependyma, obliteration of the sulci or cisterns by tumor, hydrocephalus with transependymal edema or enhancing cortical nodules. While only about 24% of patients have abnormal CT scans at the time of presentation, 72% will develop one or more CT abnormalities in time. Spine MR or a myelogram might also show tumor nodules. CSF markers may be helpful when positive. An elevated carcinoembryonic antigen strongly suggests meningeal cancer, but abnormal levels are found in less than one-third of patients with proven meningeal carcinoma and only rarely in lymphomatous meningitis. The sensitivity of elevated levels of beta-glucuronidase approaches 90% in patients with metastatic leptomeningeal breast cancer, but it is not specific. Beta-2-microglobulin may be elevated in patients with hematologic malignancies. Negative imaging studies and protein markers, as in this case, do not preclude a diagnosis of leptomeningeal carcinomatosis.

How does this patient's CSF fit a diagnosis of meningeal cancer? The elevated CSF protein is typical. CSF glucose may be depressed, but is normal in 75% of cases. CSF pleocytosis is often present, is typically lym-

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3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIDNS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene)

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WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

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Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE)**. There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.

2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3. Correction of acidosis, if present, with intravenous sodium bicarbonate.

4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity

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phocytic and may be as high as 500 cells/mm³. The CSF may also contain exfoliated tumor cells. In one large series only 50% of CSF cytologies were positive at the first tap, but the positivity rate rose to about 90% after the third sample. It is well established that in the remaining 10%, the meninges may be found covered by a sheet of neoplastic cells at postmortem examination.

In summary, I think the patient had a metastic neoplastic meningitis. I believe the primary neoplasm lay outside the central nervous system because of the early and severe constitutional symptoms. The prolonged, progressive downhill clinical course suggests a carcinoma, even though lymphomas more commonly metastasize to the meninges without simultaneously involving the brain parenchyma. The patient's smoking history places him at risk for carcinoma of the lung, one of the 2 most common causes of leptomeningeal carcinoma among men in every series. Extrathoracic metastases occur in 50% of epidermoid carcinomas, 80% of adenocarcinomas and 90% of small cell carcinomas. In a series of 500 patients with small cell carcinoma, 11% had leptomeningeal metastases. While most of those had parenchymal metastases as well, 8% had meningeal metastases alone.

The diagnostic procedure was either a CSF study or a meningeal biopsy. I believe the clinicians lost confidence in still another CSF examination after 5 negative studies, choosing instead to invoke Sutton's law and "go where the money is." Thus, I think the diagnostic procedure was a meningeal biopsy showing neoplastic infiltration of the meninges by a lung carcinoma, most likely small cell carcinoma.

Pathology Discussion

Robert L. Schelper, M.D., Pathology: The first specimen to give a clue to the diagnosis was the histochemical evaluation of the frozen muscle biopsy. A muscle biopsy evaluates more than muscle; it examines the motor unit (which includes the spinal and motor neuron), its axon in the peripheral nerve and the muscle fiber innervated by the axon. Nerve and vessel branches within the muscle are also examined.

It is clear something is wrong in this muscle biopsy because not all the muscle fibers are the same size. It is also clear that atrophic fibers are clustered in small groups. Based on those observations, this patient has aneuro-

pathy. Either the peripheral nerve or the motor neuron are diseased, resulting in atrophy of the muscle fibers innervated by that nerve. The clustering of type I and type II fibers suggests some reinnervation. The biopsy thus shows us that the peripheral neuropathy has been present for weeks to months. A nerve biopsy showed axonal degeneration and segmental remyelination, supporting the diagnosis of peripheral neuropathy. There is no sign of vasculitis in either specimen.

CSF samples began to show atypical, large cells. One sample showed a small cluster of cells suggesting a neoplasm, but the pathologist correctly showed restraint in not calling this potentially reactive atypia, a malignancy.

The answer was found in a leptomeningeal biopsy showing metastic carcinoma. Some of the cells had vacuoles, suggesting an adenocarcinoma. The prognosis in that disease is dismal; this patient died after developing recurrent pneumonias. At the time of autopsy, there was no obvious tumor except in the adrenal glands. Where is the primary? In a man with bilteral adrenal metastases and a smoking history, the obvious choice is lung.

Grossly, the lungs had many small white nodules, but section after section revealed only resolving pneumonia. Finally, we found a small pucker on the surface of the right lung apex, pulling the pleura down into a white nodule less than a centimeter in diameter. The histologic sections showed an adenocarcinoma with an appearance identical to the tumor in the leptomeninges. The tumor contained an area of fibrosis as well, suggesting a scar carcinoma. There is argument about whether scar carcinomas actually arise in a scar or if they cause the scar; some say many scar carcinomas arise in old pulmonary infarcts. Sometimes you must look very hard to find the primary neoplasm, even at the time of autopsy.

Clinical Diagnosis: Metastatic Leptomeningeal Carcinomatosis, Primary Bronchogenic Small Cell Carcinoma

Pathologic Diagnosis: Metastatic Leptomeningeal Carcinomatosis, Primary Pulmonary "Scar" Adenocarcinoma

A bibliography is available either from the author or the editors of *IOWA MEDICINE*.

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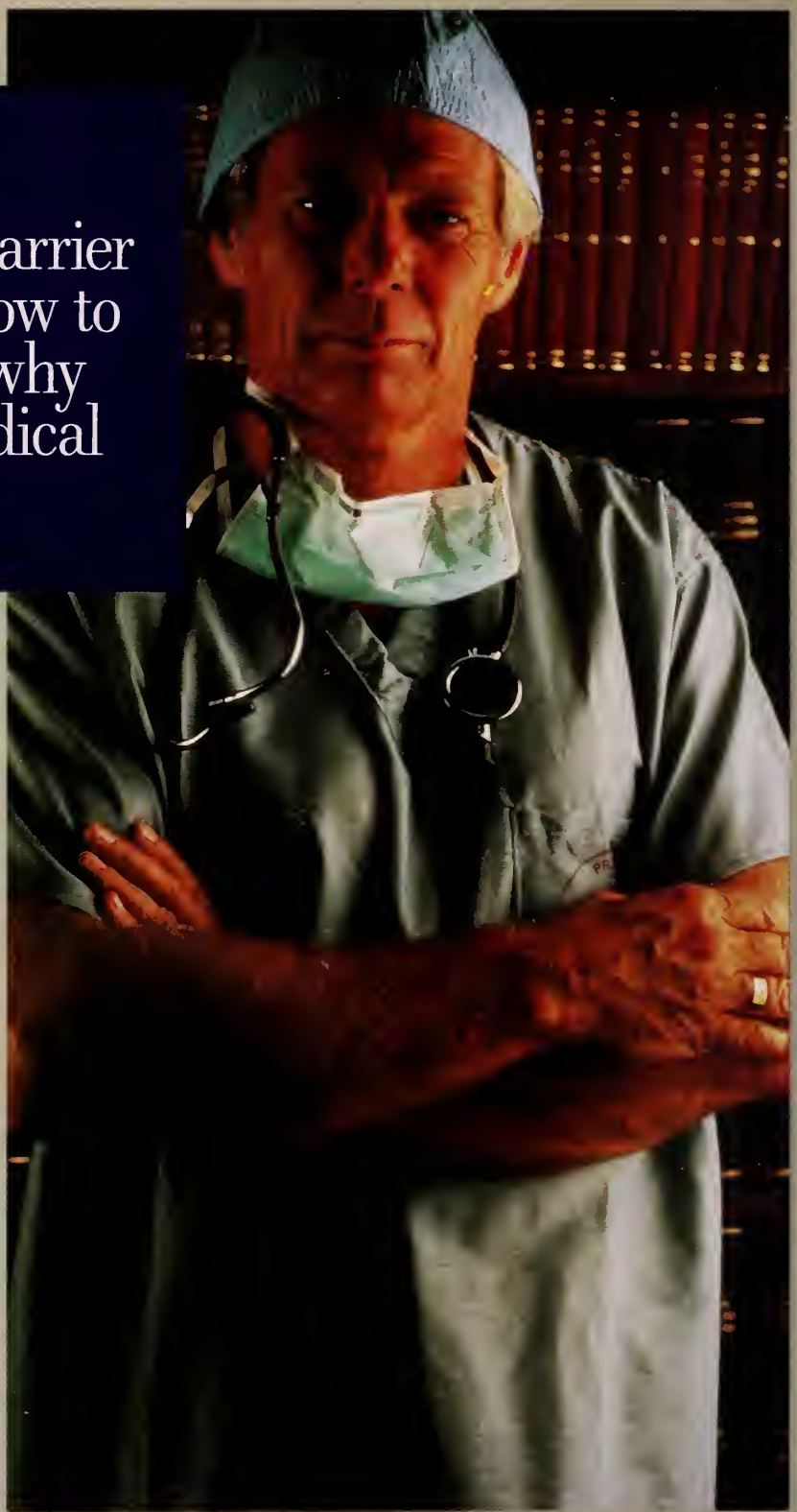
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Marion E. Alberts, M.D.



The Editor Comments

RBRVS Debate Continues

The "value" or "worth" of a man is, as of all other things, his price; that is to say so much as would be given for the use of his power.

—Thomas Hobbes (1588-1679), English philosopher

Value — a fair return or equivalent in goods, services or money for something exchanged.
Relative (adjective) — not absolute or independent.

THE VOCABULARY OF OUR PROFESSION has seen an increase in non-medical terms during the past several decades. We have been encumbered with such terms as "vendor," "third-party," "Medicare" and "health maintenance." These terms are intimately involved in the way we practice medicine.

To compound the problem, the Medicare patient is involved with a new language which surely may be confusing. I received the 1989 "Medicare Handbook" recently. This "official information" handbook from the U.S. Department of Health and Human Services contains 1½ pages of a "glossary of Medicare-related terms." Taking into account literacy variations in the aging population the information must be quite confusing. Much terminology is not totally clear to those of us in the position of providing and billing for medical services.

Now we are reintroduced to another term — "relative value," but with a new twist — "resource based." The concept of the resource based relative value scale (RBRVS) has been conceived to redistribute Medicare payments to physicians by service, specialty and geographic area.

The RBRVS is based on the cost of physician resources for physician services in 18 major specialties (specialties that account for most of Medicare charges). The resource cost of the physician's services would be based on such parameters as intensity of mental effort, judgement, technical skill, physical effort and stress, time spent performing the service, the amortized cost of specialty training and overhead costs.

These parameters may seem fair, but there are serious limitations. Only the resource inputs are measured. There is no consideration of the benefits of professional services, nor of the differences in physicians' competence or the quality of services. Furthermore, there is no consideration of differences in the severity of the illness nor the health outcome.

The authors of this plan have put much time and study into their conclusions. As with any departure from existing plans and procedures, there will be further study and revisions. There will be much debate as efforts for refinement proceed. One such debate occurred at the annual scientific session of the IMS on April 21. A report of that discussion appears in this issue of *IOWA MEDICINE*. The comments are illuminating. It will be noted that already dissension has come from a large group of physicians — the American College of Surgeons.

This is an issue that has viability. As with any living thing, there will be changes with growth. Growth is often associated with "growing pains." Physicians should be alert to the upcoming debates and modifications (if any) of RBRVS. The impact of this concept may be great on the delivery of health services and subsequent remuneration for some. — *M.E.A.*

Richard M. Caplan, M.D.



CME Notebook

Craftsmanship

AT A RECENT LECTURE the speaker invoked the ancient Greek notion of craftsmanship (*techné*) and applied it to medicine. He argued that to practice medicine requires the same 2 elements of craftsmanship, intellection and production, needed for all other crafts, such as playing a musical instrument or making a pair of shoes. Although I'd not thought of it that way (and didn't recall the word intellection) I had to concede there are ideas (concepts, understandings, plans) a physician needs in order to understand patients and their problems. But such mental insights are of no use to practical affairs (the patient) unless joined by some acts of doing. The words "acts" and "doing" suggest musculoskeletal follow-through to the chemical or cellular events of the brain. Most commonly we use speech (for explanation, discussion, instruction) and movements of larger muscle groups (for physical examination, patting the patient reassuringly, writing prescriptions, performing surgery).

The lecture was sponsored by my university's College of Law and an interdisciplinary faculty group interested in the nature of rhetoric, in both its senses: the study of words and the rules for manipulating them for communication; and the older sense of oratory or persuasion, often with a connotation of falseness or insincerity. The role of rhetoric entered the lecture not only regarding law but also medicine, for the speaker often found useful comparisons. My own ruminations meandered to the indispensible role of rhetoric in making effective the craft of medical practice. Granted, one might (through intellection) conceive of establishing a clear airway for an unconscious patient; one might do it for such a patient, and believe it was only a motor act, involving no use of words or persuasion. But such a belief overlooks the effective use of words, written or spoken, that allowed the intellection required to perform the manual procedure.

With mentally competent patients, the physician always seeks to explain and persuade. Maybe you'd rather call such activity "educating the patient" or "selling your recommendations." For some specialties the learner may be not a patient but a board of directors, a legislature, other physicians, etc. No matter; if you can't teach/sell successfully, you are lost as a physician. You fail in the exercise of your craft.

Although Plato judged craftsmen as lower beings than his philosopher-kings, I feel craftsmanship warrants no bum rap. Plato was wrong about lots of things — for today's world, anyhow. I would wish, though, that medical craftsmen be reflective about themselves and their work. This requires reading, discussing, thinking and sometimes even writing thoughtful comments about themselves and their activities. There is no end of questions to ponder. Here's one put to me by a friend who attended the same lecture: does anesthesia remove not only the pain of surgery, but also the sense of guilt that might otherwise accrue to one who understands illness as a punishment?

Without reflective acts of intellect there can be no effective crafts of medicine, without which there can be neither a medical profession nor a well-served society.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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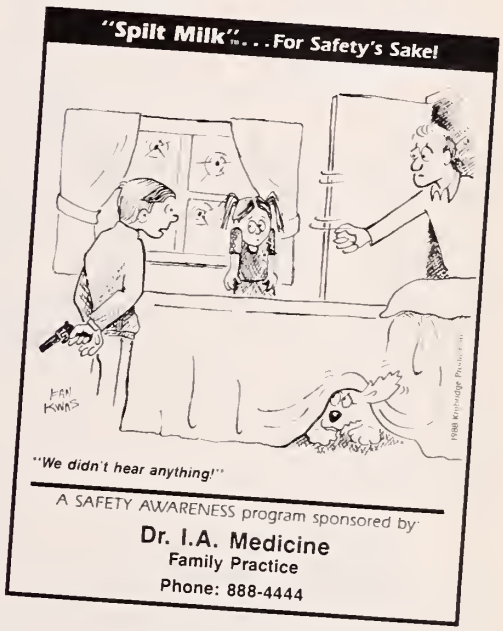
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Dr. Holwick outside of hospital where she practices as a civilian traumatologist.



Dr. Holwick in operating room at Letterman Army Medical Center.

JANN L. HOLWICK, M.D.

General and Trauma Surgeon.
Captain, U.S. Army Reserve.

EDUCATION University of Southern California, B.S.; University of California School of Medicine.

RESIDENCY Harbor General Hospital—UCLA Medical Center.

HOSPITAL AFFILIATIONS St. Luke Hospital; Huntington Memorial Hospital, Pasadena, California; Traumatologist, Arcadia Methodist Hospital, Arcadia, California.

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Brief Summary

Consult the package literature for complete information.

Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that < 0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported, it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hypercuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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Additional information available to the profession on request.

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* This article was authored by Scott Porter, a partner with McGladrey & Pullen, Des Moines.

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AIDS Prevention Program

THE AIDS PREVENTION PROGRAM has undergone dramatic growth since its development as a program within the Iowa Department of Public Health (IDPH) in 1986. In addition to providing educational services throughout the state to health care professionals and the general public, the AIDS Prevention Program operates an active surveillance program, provides educational training on Human Immunodeficiency Virus (HIV) pretest and post test counseling and conducts a Partner Notification Program as mandated by the Iowa Legislature.

To perform tasks delegated to the IDPH, the AIDS Prevention Program depends on the private health care practitioner for initial reporting of positive HIV tests. Under the Iowa Administrative Code, physicians or other health practitioners at whose request an HIV-related test is performed, shall report confirmed positive results within 7 days of receiving the confirmation. Also mandated is reporting of HIV testing which has been confirmed as positive by clinical laboratory directors and directors of blood banks and blood plasma centers.

To make reporting by physicians easier, the Iowa State Confidential Report of Sexually Transmitted Diseases was revised in November 1988. In accord with the Iowa Administrative Code, the patient's name and address are not listed when reporting confirmed HIV infection unless the individual gives specific written authorization for the information to be released to the IDPH. If authorization is not granted, a personal identifier is to be used. Other demographic information (sex, date of birth, marital status and race/ethnic) is reported regardless of whether the name or personal identifier is used. After completion of the physician's section on the reverse side of the form, the report should be mailed to the IDPH in preaddressed envelopes available from the Sexually Transmitted Disease Section of the Department.

The Iowa Administrative Code permits insurance agents to request an HIV test for any applicant. According to Iowa Code 191-15.12(505.16), the applicant must sign a written release which states the purpose for which the test results may be used. The release also provides information regarding the purpose, use and meaning of the HIV test and contains a statement regarding disclosure of test results. The completed release is mailed with the blood specimen to a specified reference laboratory. In the event an HIV test is requested but the signed release not enclosed, the reference laboratory will not perform HIV testing.

The IDPH initiated partner notification services for persons with confirmed HIV on November 14, 1988. Post test counseling with the infected individual provides an explanation of this program. Participation in the Partner Notification Program is voluntary and written consent is required prior to initiation of notification interviews. IDPH disease prevention specialists and STD investigators from the Public Health Departments of Linn, Black Hawk and Scott counties will conduct the interviews on a "person-to-person" basis only. Confidentiality regarding the identity of the infected patient and contacts is protected under penalty of law.

Further information on the AIDS Prevention Program is available from Jack Kelly, director, Division of Disease Prevention, 515/281-7785.

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About Iowa Physicians

Dr. Jon Gates, director of the Radiology Department of Burlington Medical Center, was recently elected president of the Iowa Radiologists Society at the group's annual meeting in Iowa City. **Dr. John A. Walck,** Sioux City, recently passed the certification examination of the AMA on Alcoholism and Other Drug Dependencies. Dr. Walck practices at Wholistic Health Services. **Dr. Michael Faust** of Forest Park Obstetrics and Gynecology, Mason City, has become a certified diplomate of the American Board of Obstetrics and Gynecology. **Dr. Mary Doyle** has joined the Mercy Care Clinic in Marengo. Dr. Doyle received the M.D. degree from the U. of I. College of Medicine and completed a residency at Truman Medical Center, University of Missouri School of Medicine, Kansas City, Missouri. **Dr. Timothy Lowry** has joined the McFarland Clinic, P.C. Nevada office. Dr. Lowry had been in family practice at the McFarland Clinic, P.C. Jewell office for 4 years. **Dr. Richard Trinity** has joined the Montgomery County Memorial Hospital staff, Red Oak, as a general surgeon. Dr. Trinity received the M.D. degree from the University of Minnesota Medical School, Minneapolis, Minnesota and completed his residency at Bronson-Borgess Hospitals, Kalamazoo, Michigan. Prior to locating in Red Oak,

(Continued next page)

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Dr. Trinity practiced at Park Rapids Clinic in Park Rapids, Michigan. **Dr. Thomas A. Garside** was awarded the Distinguished Service Award for National Institute of Health Region VII at the annual meeting of the National Council of Community Mental Health Centers in New York City. The award recognizes individuals who exemplify the values of community mental health and who have made significant contributions toward the goals of community mental health in their region. Dr. Garside is the administrative and clinical director of the Vera French Community Mental Health Center in Davenport. **Dr. Ronald Abbott** has joined the staff of Elkader Medical Associates Clinic. Dr. Abbott practiced in Waterloo for 17 years prior to joining the Elkader Clinic. **Dr. Brian F. McCabe,** head of the Department of Otolaryngology at University of Iowa Hospitals, recently received the Award of Merit of the American Otological Society, Inc. Fewer than 50 people have been given the award in the 121-year history of the Society.

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All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

The paper will be reviewed by the publications committee and a follow-up letter will be sent to the author, either accepting or rejecting the article.

All material is subject to editing by the staff copy editor to assure clarity and good grammar and to conform to *IOWA MEDICINE* style and format. The author will receive galley proof of the paper prior to publication to check for inaccuracies, but no rewriting may be done after the manuscript is set in galleys.

Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

IOWA MEDICINE accepts only material which has not been submitted or published elsewhere. When a paper is accepted for publication, the editors reserve the right to publish it when appropriate or when space is available. Papers submitted by IMS physician members are given first priority.

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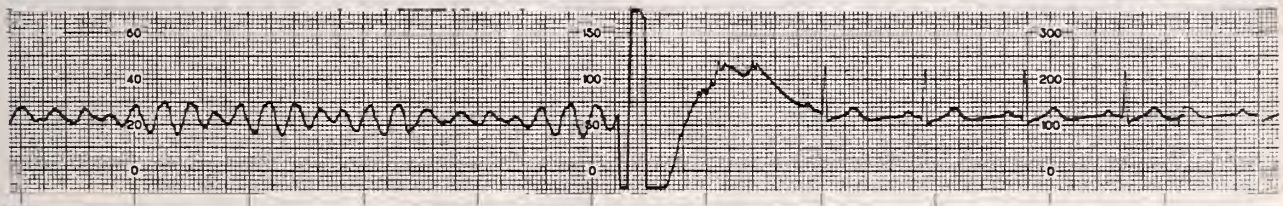
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In the Public Interest

An Award-Winning Program

RESOURCE BASED RELATIVE VALUE STUDIES, which may determine physician reimbursement for care of Medicare patients, have caused a predictable furor in the health care community. However, in the midst of all the debate, Iowa physicians have been quietly initiating a Medicare program of their own.

Since its inception a year ago, the Society's voluntary Medicare assignment program "Medicare Partners" has moved out of infancy to become a fledgling and award-winning program of which IMS members can be proud. Iowa physicians have responded admirably to this joint effort by the IMS and the Iowa Association of Area Agencies on Aging (IAAAA) to assist low-income elderly with certain medical expenses.

Following implementation of 2 pilot projects in Woodbury and surrounding counties and in Polk County last year, statewide patient enrollment in Medicare Partners was kicked off with simultaneous press conferences in 11 cities last October. Statewide physician enrollment has been underway since July, 1988.

To date, 75% of all practicing physicians statewide have enrolled in Medicare Partners. Physicians in the program agree to accept copayments, deductibles and Medicare reimbursement as payment in full for services to Medicare patients age 65 or older who meet certain income guidelines. The Iowa Association of Area Agencies reports 10,000 Iowa elderly are now enrolled in the program.

In March of this year, the IMS was notified that Medicare Partners was the recipient of the 1989 Governor's Volunteer Award. The Society and its Medicare Partners program were nominated by the Northwest Aging Association in Spencer. On April 7, Daniel Youngblade, M.D. and Kathryn Opheim, M.D. accepted the award from Governor Terry Branstad at recognition ceremonies held in Sioux Center.

On May 18, Medicare Partners garnered its second award — the Corporate Achievement Award of the Iowa Department of Elder Affairs. The award was presented to the IMS during the 1989 Governor's Conference on Aging at the Des Moines Convention Center.

Though Medicare Partners formalizes what many Iowa physicians were already doing on an individual basis, the high level of physician participation in this structured program provides definitive proof Iowa physicians are eager to help low-income elderly. The Iowa Medical Society will continue enrolling physicians in the program and will be monitoring geographic and specialty participation levels throughout Iowa to ensure medical care is available to all low-income senior citizens.

Medicare Partners has the potential to assist thousands of elderly Iowans and truly is a program Iowa physicians can point to with pride.

June 1989

Iowa Medicine

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(ENALAPRIL MALEATE | MSD)

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema.* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident.

If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction; rhythm disturbances, atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostate hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol%, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486. J6VS18R(815)

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The sculpture "Little Boxes" was done by Des Moines artist Robert Sunderman for the lobby of the Iowa Public Television studios in Johnston. A graduate of the University of Iowa, Robert works with all types of metals, found objects and other materials. His work is available in the Des Moines Art Center Museum Shop and the Jean Sampel Studio Gallery.

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Donald F. Rodawig, M.D.

President's Privilege



Thoughts Worth Repeating

SINCE THE IMS ANNUAL MEETING in April I have reflected on remarks made to the delegates by Dr. Alan Nelson, president-elect of the AMA and Dr. Dan Youngblade, immediate past president of the IMS. I was very impressed with their insight and feel some of their comments warrant further attention. The full text of their remarks is reprinted in this issue.

Dr. Youngblade decries the fact physicians have become "health care providers" and urges us to try and become once again the community leaders everyone looked up to and honored. I certainly agree that we owe our patients and our profession something extra in return for the privilege of being doctors. We face the challenge of how to retain our role as patient advocates and take charge of the health care scene rather than leaving it to bureaucrats.

We can accomplish these goals through communication with our patients. Public attitudes can be shaped through effort, dedication and money. Along with Dr. Youngblade, I believe we must work together in organized medicine to be successful.

Dr. Nelson pulls no punches in his analysis of today's practice environment. The public will continue getting health care information which is often inaccurate, leading to mistrust of our profession. HCFA will continue to collect massive amounts of data. Explosive increases in health care costs will continue to be the driving force in evolving government policy.

I couldn't agree more with Dr. Nelson's warning that physicians must "organize, get involved, go to the mat and win." I believe our patients want *us* in charge of their care. We must work to retain the freedom to make clinical decisions and for relief from the malpractice crisis. We must guard against fragmentation due to fee discrepancies among specialties.

It is obvious to me after hearing these 2 distinguished physicians that we have one path to take if we want to preserve our professional freedom and integrity. That path leads to organization at the grass roots level, beginning with county societies. We must communicate actively with our best advocates, our patients. We must continue efforts at the state level to influence the public and legislators and we must support AMA policy at the national level.

To do any less is to relinquish our right to help shape the future of health care.

Donald F Rodawig MD

Donald F. Rodawig, M.D.
President

Repaying Our Debts

DANIEL YOUNGBLADE, M.D.
Sioux City, Iowa

In remarks to the 1989 IMS House of Delegates, retiring IMS President Daniel Youngblade, M.D. discussed physicians' commitments to society and their profession.

AS A YOUNG PHYSICIAN starting out in medical society activities some 25 years ago I envisioned that each of us owed "something extra" to our profession and society in repayment for the privilege doctors are given in caring for people. Years have passed, ideas have come and gone, problems we did not even envision have surfaced, have been solved and have become day-to-day occurrences. Through our abilities, compilation of information through educational experiences and development of our own learned skills we have had an impact on society.


Daniel Youngblade, M.D.

How have you as an individual fulfilled or repaid the commitment you pledged as you entered this very special profession? Are you looked at as a leader in your community? Are you that ever caring and compassionate doctor revered by your patients? Are you held in high esteem by your peers?

Do you show concern for the public you serve? Do you give your unpaid time to the community, the schools, a church? Do you show interest in public health issues? Do you express your thoughts to legislators and civic leaders about issues other than those directly beneficial to medicine? Do you financially support the ideals, concerns and goals of those we serve? Are you a visible symbol of all the "good things" physicians do in society?

In years gone by, the physician was a community leader, a highly respected person who adults and children looked to for advice and direction. He was that special compassionate, ever caring person the entire community looked up to and honored. Unfortunately, today we are often perceived as a "provider of care" for those "recipients or beneficiaries" we serve. We are often seen as people who seldom have time and never show concern for anyone or anything other than ourselves. We must not be just "providers of care." We must remain doctors in this honored profession of medicine. Those we serve must be our "patients" — not beneficiaries of our services. All physicians must show an interest in reviving the doctor-patient relationship.

We must work to change how the public perceives us as Doctors of Medicine. In our day-to-day activities, we must be the businesslike, friendly and concerned doctor who has all of the positive attributes desirable in a modern changing society, and retain the personal concern and touch that was prevalent in the doctors of old.

Let no one suggest that service to mankind was the only reason we entered the practice of medicine. Economic gain and security, a place in society, community pres-

tige and the ability to improve our lot — all were factors in our decision. We can't and don't want to return to the "good old days," but we must do all we can to preserve our profession's special place in society.

We face an increasing number of new challenges. The environment in which we practice has a direct bearing on each of us.

How have we come to a point where so many of our patients vilify us as a profession even though they trust us as individuals? We were dedicated to the principle of informed consent long before it became an expedient for trial attorneys. Some chastise third party payers as "wolves in sheeps' clothing" pretending to represent the patient while seeking profit and control. Individuals other than physicians often make critical decisions about hospital admissions, medical care and reimbursement. It is no surprise that well-intentioned, but misguided efforts are also reflected in other intrusive activities such as the Harvard based relative value scale and additional efforts by HCFA and others to control medical costs.

'We must do our utmost to defend our profession, preserve quality health care and protect our role as patient advocates.

It is time for physicians and patients to wake up and take stock of what is happening in health care. While physicians give the shots, health care managers are calling them. This shift has occurred at a time when the cost of medical care has greatly increased as a result of technological advances. The questions don't get easier with matters such as AIDS, fetal cell transplants and euthanasia under debate. It is essential that patients as individuals and collectively learn that the responsibility for these decisions should not be given up to others.

We can find a receptive audience in individual patients, but only infrequently do we take the opportunity to communicate with them about anything other than their medical problems. Educational, legal, sociological and political developments make it essential for every doctor to be concerned about public relations. Principles are unchanging, but they require interpretation and application in light of current conditions.

Our patients want — no, demand — high quality care. But quality care has been achieved at considerable cost and no society is affluent enough to "have it all." Our nation's resources are not scarce, but neither are they without limit. Where this fine line in medicine will be drawn and who will draw it is an area of grave concern. It is an area where physicians must play a vital role.

Physicians have only been passively involved in dealings with government and third party payers to this point. We must help our patients and society understand these problems. We must communicate with our patients and the public in new ways. People must understand what their doctors can and can't do for them. They must share the responsibility for their health. They should not allow important decisions about health care to be made by elected officials or bureaucrats.

Public attitudes can be shaped, but doing so requires effort, dedication and money. It will be a difficult challenge, but it is essential that a public understanding of the health care revolution be achieved. The resources of organized medicine are formidable and include the finest representatives of general and specialty societies in the nation, who have a reputation for dedication to the patient and society. We need all of you to work in a campaign to promote our present system of medicine.

Working at the county, state and national levels, organized medicine can make a difference. We must try any method at our disposal to educate the public. We must do our utmost to defend our profession, preserve quality health care and protect our role as patient advocates. The stakes are high for our patients and ourselves. Don't stand idly by as people outside our profession shape the future of health care. I urge you to become and stay involved in organized medicine in our quest to inform the public about the benefits of American medicine and to help rekindle the time-proven doctor/patient relationship.

Annual Meeting On Film



CLOCKWISE, FROM UPPER LEFT, Emmett Mathiasen, M.D., Council Bluffs, past IMS president, tries his luck with the IPMIT basketball hoop; 1989 Merit Award winner Enfred Linder, M.D., Ogden, and his wife Beth; the speakers' table at Saturday evening's annual banquet; (at left) Eldon Huston, IMS executive vice president and Bruce Trimble, M.D., Mason City, IMS trustee, chat with U.S. Senator Tom Harkin, who addressed delegates at Saturday morning's House session.



















CLOCKWISE, FROM UPPER LEFT, the 1989-90 IMS Board of Trustees; Clarence Denser, Jr., M.D. was honored for 10 years service as chairman of the Committee on Legislation; the Reference Committee on Legislation meets late Saturday evening; retiring president Daniel Youngblade, M.D. greets fellow Sioux Citian Guy Posey, M.D.; President-elect Robert Whinery, M.D. chats with Leo Plummer, M.D. prior to Saturday's House session; 1989-90 President Donald Rodawig, M.D. and John Eckstein, M.D., Dean, U. of I. College of Medicine, at the President's Reception.

On the Road Again

DR. ALAN NELSON SAYS he was absolutely delighted at the prospect of spending the weekend in Des Moines.

Before you decide Dr. Nelson's joy was out of proportion for the treat in store, know that this *medicus migratorius* seldom spends more than one night in any city. In fact, when Dr. Nelson and his charming wife Gwen arrived in Des Moines for the IMS Annual Meeting and Scientific Session, he had been in 9 cities in the previous 11 days.

"I've been to Washington, D.C., Rochester, Texas, New York, back to Washington and to several other places I can't recall," says Dr. Nelson, president-elect of the American Medical Association. "This is only my third trip to Iowa but I feel like a native. We were really looking forward to coming here because we actually get to stay a few days."

Dr. Nelson, a Salt Lake City, Utah internist, possesses a calm eloquence which places him much in demand as a spokesman for the AMA. He has been traveling about 250 days a year for the past several years and will travel over 300 days this year.

"Delores Pavela at the AMA does a wonderful job of working out all the scheduling conflicts. She knows where I am when my wife doesn't even know."

In March of this year, Dr. Nelson spent 2 weeks in South Africa at the invitation of the South African government. He spent his time touring hospitals and meeting colleague physicians.

"I was asked to visit because some European countries are calling for a blockade of scientific information to South Africa because of Apartheid," he relates. "In my opinion, this will only hurt the people."

Dr. Nelson, whose term as president begins in July, is very interested in the scientific aspect of medical practice and hopes it will receive a "renewed emphasis" during his presidency. In fact, he sought the highest AMA office because he wanted to "help organize medicine move in the directions I think are important."

In his travels at the grassroots level of organized medicine, the issue most physicians express concern about is loss of authority and independence.

"There is an endless amount of disillusionment over erosion of our professional autonomy," he reveals. "An example is the 'medically unnecessary' letters. I'm hearing less about that now because the AMA has taken action on due process."

In Dr. Nelson's opinion, the medical profession has been slow to accept the relentless pressure for accountability.

"It's part of the world we live in now. The demand for accountability is global. Everyone is concerned about costs and we're seeing our professional freedoms challenged."

Dr. Nelson also hears plenty of well-justified grumbling over the continuing professional liability crisis.

"The short range solution to this grave problem is tort reform. The long range solution is changing the tort laws to take medical liability cases out of the courtroom," he states.

Understandably for someone standing at the prow of the symbollic ship of medicine, Dr. Nelson is also very concerned with the public's perception of physicians.

"We need to demonstrate greater social responsibility to enhance public opinion. We are a caring profession and we have to communicate that to the public. My inaugural message will stress a renewed emphasis of the 'art of caring.' "

In the meantime, Dr. Nelson will no doubt continue his vagabond ways. But he'll carry with him warm memories of his "extended" stay in Des Moines and his participation in the IMS Scientific Session, Annual Banquet and House of Delegates.

"Iowans are so honest and friendly," he concludes, "They're the kind of people it would be impossible not to enjoy being with."



SPECIAL VISITORS ARRIVE — (From left) Dienne Rodawig and Donald Rodawig, M.D., IMS president, greeted Alan Nelson, M.D., and his wife Gwen upon their arrival at the Des Moines Airport for the IMS Scientific Session and Annual Meeting. Dr. Nelson, a Salt Lake City, Utah internist, is president-elect of the AMA.

Five Goals For Organized Medicine

(Following are excerpts from a speech given by Alan Nelson, M.D., president-elect of the AMA, to the IMS House of Delegates Sunday, April 23, 1989.)

WHAT SHOULD WE BE DOING to retain a pluralistic free enterprise system in medicine and retain the essential professional values that are so important to medicine?

We are not helpless and there is much we can do. First, we must set our goals . . . define those essential elements of our profession, organize, get involved, go to the mat and win. Physicians are not weak and stupid. We have many resources and a lot of clout if we decide to move.

Goal 1: Professional autonomy commensurate with our responsibility. Grant that accountability goes with the territory and we must commit ourselves to assure quality. If we default on our authority we can't complain. If I refuse to see one of my patients in a nursing home, I have no complaint if nursing assumes that role. But patients want an advocate and they want a physician in charge. This goal is winnable.

Goal 2: Equity and fairness in reimbursement. Most physicians work very hard and are worth what they receive. We have no sympathy for the few that have taken a license to practice medicine as a license to steal. We can win the battle over mandatory assignment because it is an equity issue. Society can understand that those who are able to pay a physician's usual fee should do so even though the payment from Medicare is less than that usual fee.

Goal 3: We must have full due process in all review. The vast majority of physicians have appropriate reasons for what they do and are tired of taking the rap for those few that rip off the system. But we must be presumed innocent until proved guilty, and we must rely on education to change behavior because the vast majority of doctors are motivated and want to practice proper, honorable medicine.

Goal 4: We must have the freedom to make clinical decisions without being forced into situations of conflict of interest. I have a great deal of concern about some gatekeeper arrangements that include a risk pool that is substantial enough to create conflict of interest; and the concept of expenditure caps, in which a conversion factor under a relative value schedule would be linked to meeting total expenditure targets, has the potential for creating under utilization.

Goal 5: We must have relief from the malpractice crisis. The AMA's plan for an alternate dispute resolution system has a great potential for the future.

If we default on working to achieve these goals, the scientific miracles of the future will not be as abundant for our people because medicine will no longer attract the best and the brightest, as it has in the past and must in the future.

Sticking Together

DONALD RODAWIG, M.D.
Spirit Lake, Iowa

In his address to the 1989 IMS House of Delegates, Donald Rodawig, M.D., incoming president, outlined his hopes for the coming year.

I AM HONORED YOU HAVE CHOSEN me to be president of the Iowa Medical Society. I promise to do my best to serve you and our profession in the coming year.


Donald Rodawig, M.D.

Dan Youngblade will be a tough act to follow. He has been an outstanding leader and we are fortunate to have his continuing involvement on the Board of Trustees for another year.

The past 12 months have been eventful. You already know this after reviewing and taking action on a great number of reports and resolutions that have come before the House of Delegates this weekend.

To remind you of key issues and achievements:

- The malpractice crisis has eased somewhat. Iowa physicians are fortunate to have access to excellent liability coverage through the Society's affiliated company — the Iowa Physicians Mutual Insurance Trust. As a result of our efforts to educate the public about professional liability concerns, the number of legal suits filed has decreased and there has been an increase in the number of jury verdicts favorable to physicians.

Because of the positive patient care objectives and results of the Medicare Partners program developed by the IMS and the Area Agencies on Aging, the threat of mandatory Medicare assignment has been substantially weakened.

- The utilization of Resource Based Relative Value Studies under Medicare is nearly a reality. The subject was discussed in depth at Friday's Scientific Session by nationally prominent speakers. RBRVS issues will be closely monitored in the coming months and every effort will be made to achieve a positive consensus regarding this federally mandated method of Medicare payment.

- The IMS has maintained good liaison with the Iowa Foundation for Medical Care, particularly through our representation on the IFMC Provider Advisory Committee. Although our pathways may sometimes differ, we do have common objectives with respect to assuring quality of care and we must work with each other to achieve them.

It is probably inevitable that intrusions into the practice of medicine by state and national regulatory agencies and business and political organizations will result in differences and misunderstandings. What physician would disagree with the following excerpt from a letter written by the chancellor of the University of Massachusetts Medical Center to his daughter, a second year medical student?

> When my turn comes, and my life is clouded by disease, I will want a physician prepared to assume individual responsibility for my care. I will want no part of committees with diffused accountability. I will want a physician capable of resisting external pres-

sures to put economics, regulations and other extraneous factors about the primary objective of serving me . . . the patient.

The physician also told his daughter he was confident such physicians would abound and society would understand that in medicine, values of caring must predominate over values of finance.

Who would disagree?

During the coming year, I and other officers plan to meet with our colleagues at the grassroots level to discuss the importance of IMS membership. We want to underscore the fact that only through "unity" in organized medicine can physicians be effective advocates for our profession and our patients.

I'd like to close with another excerpt, this one from a recent essay by Robert Fulghum. He alludes to the importance of unity:

Most of what I really need to know about how to live, what to do, and how to be, I learned in kindergarten. Wisdom was not at the top of the graduate school mountain, but there in the sandbox at nursery school.

These are the things I learned: Share everything. Play fair. Don't take things that aren't yours. Say you're sorry when you hurt somebody. Wash your hands before you eat. Flush. Warm cookies and cold milk are good for you. Live a balanced life. Take a nap every afternoon. When you go out into the world, watch for traffic, hold hands, and stick together.

Think of what a better world it would be if we all . . . everyone in the whole world . . . had cookies and milk about 3 o'clock every afternoon and lay down with our blankets for a nap. Or, if we had a basic policy in our nations always to put things back where we found them and to clean up our own messes.

It is still true. No matter how old you are, when you go out into the world, it is best to hold hands and stick together.

I look forward to working with you during the coming year and I shall try very hard to deserve your confidence.

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The Manual is authored by Don Elliott. His background includes over 25 years of investigative experience as a Naval Intelligence Officer, Retail Credit Administrator, and Owner of Collection Agencies.

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House of Delegates Sets IMS Policy

Reimbursement inequities, the nursing shortage and substance abuse were among key issues receiving attention when physicians representing county medical societies across Iowa gathered for the 1989 IMS House of Delegates April 22-23. Following is a summary of the proceedings.

THE 1989 ANNUAL MEETING of the Iowa Medical Society House of Delegates was held April 22-23 in Des Moines. House sessions were chaired by William Rosenfeld, M.D., Speaker. Open hearings were conducted by 3 reference committees on April 22. The Annual Banquet was held April 22 and was chaired by President Daniel Youngblade, M.D.

At the banquet, Enfred Linder, M.D., a retired Ogden family physician, received the 1989 IMS Merit Award. The Ben T. Whitaker Interstate Teaching Award was presented to Paul Seebohm, M.D., consultant to the dean of the University of Iowa College of Medicine.

April 22 Session

Registered for the April 22 session of the House were 136 delegates and 15 alternate delegates. Minutes of the April 24, 1988 House of Delegates session were approved as summarized in the July, 1988 issue of *IOWA MEDICINE*.

Reports contained in the 1989 House of Delegates handbook were approved with one exception. The Report of the Committee on Emergency Medical Services was referred to the Reference Committee on Miscellaneous Business.

Two checks totalling $14,708 from the AMA-Educational and Research Foundation were presented by Bruce Trimble, M.D., chairman, IMS Board of Trustees, to the University of Iowa College of Medicine. One check was earmarked for an unrestricted grant; the other for medical student assistance. John Eckstein, M.D., Dean, U. of I. College of Medicine, accepted the checks.

Outgoing IMS President Daniel Youngblade, M.D. addressed the House. His remarks are printed elsewhere in this issue.

Twenty-five resolutions were formally introduced and referred to reference committees. Actions taken on these resolutions are reported subsequently.

Supplemental Reports

The following reports were made to the 1989 House of Delegates:

Board of Trustees, by Bruce Trimble, M.D., chairman. The report covered the board's long range planning session, a proposal to construct a new IMS headquarters building and a summary of the past year's projects.

Necrology, by Robert Kent, M.D., chairman, Judicial Council.

Nominating Committee, by Lawrence Goodman, M.D., chairman. The 1989 officer slate was read, with no further nominations from the floor.

Committee on Legislation, by Clarence Denser, Jr., M.D., chairman. Dr. Denser

summarized key issues during this year's legislative session and announced he will be stepping down after 10 years as chairman of the committee. He was formally recognized by the delegates for his outstanding service. His remarks to the house are printed elsewhere in this issue.

Iowa Medical Political Action Committee (IMPAC), by William Eversmann, M.D. Delegates were also addressed by C.L. Montgomery, M.D. of Lubbock, Texas, a member of the AMPAC Board of Directors.

Committee on AIDS, by John Olds, M.D., chairman. Activities of the committee were highlighted, including the very successful AIDS seminars held with members of the Iowa Bar Association.

Iowa Medical Foundation, by Bruce Trimble, M.D., president.

Blue Shield, by Clarkson Kelly, M.D., a member of the Blue Shield Board of Directors Executive Committee. Delegates were also addressed by Governor Robert Ray, Blue Shield's new chief executive officer.

Iowa Foundation for Medical Care, by Richard Perry, M.D., president, IFMC.

IMS Services, Daniel Youngblade, M.D., president.

Iowa Physicians Mutual Insurance Trust, by Dennis Walter, M.D., chairman of the IPMIT Board of Directors. A summary of IPMIT's progress since its birth 5 years ago was presented.

Medicare Partners Review Committee, by Dennis Walter, M.D., chairman. An overview of the program's first year of operation was provided.

AMA Activities, John Anderson, M.D., chairman of the IMS delegation to the AMA.

Life Members

The following physicians were elected to Life Membership in the Iowa Medical Society:

Gerald Fry, M.D., Vinton; **William Cannon, M.D.,** Weaverville, North Carolina; **Vincent Carstensen, M.D.,** Waverly; **Asa Arent, M.D.** and **James Coddington, M.D.,** Humboldt; **Frederick Staab, M.D.,** Iowa City; **Jerald Greenblatt, M.D.,** Cedar Rapids; **Harold Ganzhorn, M.D.,** Mapleton; **Kenneth Gee, M.D.,** Shenandoah; **James Chambers, M.D.,** Des Moines; **Arthur Downing, M.D.,** Brandenton, Florida; **Roger Floren, M.D.,** Orlando, Florida; **James Skultety, M.D.,** West Des Moines; **John DeMeulenaere, M.D.,** Grinnell; **John Gauger, M.D.,** Tucson, Arizona; **Kedar Bhasker, M.D.,** and **Atlee Hendricks, M.D.,** Davenport; **Glenn Cunningham, M.D.,** and **Robert Towle, M.D.,** Bettendorf; **Francis Giles, M.D.,** and **James McCarroll, M.D.,** Fort Dodge; and **Verne Heimann, M.D.,** Sioux City.

Emeritus Membership in the Iowa Medical Society was accorded to 43 physicians.

The speaker presented information on the reference committee hearings, election procedures and the concluding session of the House.

April 23 Session

Registered for the April 23 session of the House were 125 delegates and 13 alternate delegates. Minutes of the April 22 session were read and approved.

Mrs. Jan Bannister, immediate past president of the IMS Auxiliary, spoke to the delegates about several Auxiliary projects during her term. Mrs. Norma Skoglund, secretary and nominated president-elect of the AMA Auxiliary, also addressed the House.

Alan Nelson, M.D., president-elect of the AMA, addressed the delegates concerning the future of medical practice and the benefits of membership in organized medicine.

The following physicians were announced as having been elected or reelected to the positions noted.

President-Elect: Robert Whinery, M.D., Iowa City.

Vice-President: James White, M.D., Dubuque.

Speaker of the House: William Rosenfeld, M.D., Mason City.

Vice Speaker of the House: Donald Kahle, M.D., Dubuque.

Trustee: Carol Aschenbrener, M.D., Iowa City.

AMA Delegates: John Anderson, M.D., Boone and Eugene Johnson, M.D., LeClaire.

Three District Councilors were also affirmed during annual elections: **District I** — Robert Kent, M.D., Burlington; **District VII** — William McMillan, M.D., Ottumwa; and

(Continued next page)

District XII — Clarkson Kelly, M.D., Charles City.

The speaker complimented the reference committees. Following adjournment of the House of Delegates, Donald Rodawig, M.D. was installed as president of the IMS for the coming year. His inaugural comments are published elsewhere in this issue. Organizational meetings of the Board of Trustees and Judicial Council occurred following Dr. Rodawig's installation.

House Actions

The IMS will take the following actions based on House consideration of 3 Reference Committee reports:

- Accept the Board of Trustees' recommendation that IMS 1990 dues remain at $350 per member.
- Encourage the IPMIT Board to investigate all alternatives for changes in tail coverage.
- Appoint an ad hoc committee to review the IMS election process; examine the need to limit terms of office for Executive Council members (Board of Trustees, Judicial Council, House Speaker, Vice Speaker and AMA delegates and alternate delegates); investigate opportunities to involve more physicians in organized medicine; and report to the Executive Council and 1990 House of Delegates.
- Affirm the position of the medical profession as a leader in providing quality care and promote this concept to youth to encourage them to enter the study of medicine.
- Work with the Iowa Hospital Association to make all Iowa hospitals tobacco free.
- Refer to the Board of Trustees the question of educating physicians and young athletes about steroid use and detection of steroid abuse.
- Encourage the Iowa Department of Public Health to develop a knowledge base on adverse health behavior of adolescents and support the AMA's commitment to target the highest morbidities of children.
- Encourage Iowa physicians to work with other groups to develop strategies to prevent adverse health behavior of adolescents.
- Cooperate with the Iowa Department of Public Health and other groups to provide information on maternal and fetal health threats posed by cocaine and crack and help develop prevention strategies.
- Work with various organizations to develop approaches to address health problems in the homeless.
- Affirm that the delivery of emergency medical care is an interdisciplinary system but is the practice of medicine and must remain under the direction of licensed physicians.
- Refer to the Board of Trustees the issue of confidentiality of patients with AIDS or HIV infection, for subsequent referral to an appropriate committee.
- Affirm the concept of the physician's assistant as an extension of the primary caregiver, not as an independent or partially supervised health caregiver.
- Support the Board of Medical Examiners in efforts to govern the role of a physician supervising a PA, assuring the physician retains ultimate responsibility for patient care.
- Give attention to medicine's concern about whether the use of PAs increases access to care, especially in rural areas.
- Continue working with the BME and PAs to develop guidelines for physicians supervising PAs.
- Encourage IMS delegates to the AMA to closely evaluate the AMA's pilot Registered Care Technician project.
- Encourage physicians to advocate fair base level nursing wages.
- Take an active role in evaluating nursing wages and recommend appropriate action.
- Support proposals to increase nursing education subsidies which create incentives for nurses to remain in Iowa.
- Develop proposals regarding nurses' working conditions and improving the nurse-physician relationship.
- Direct the MD/RN Liaison Committee to monitor nursing working conditions and compensation issues.
- Support efforts of nursing organizations to alleviate the nursing shortage.
- Commend Clarence Denser, Jr., M.D., for his 10 years of service as chairman of the IMS Committee on Legislation.
- Commend physicians involved in the Medicare Partners program.

- Endorse the Blue Cross/Blue Shield Caring Program for Children.
- Support elimination of Medicare urban/rural reimbursement inequities.
- Support the concept of a resource based relative value scale as a basis for a Medicare indemnity payment system.
- Oppose adjustment of a resource based relative value scale based on differences in geographic practice costs or specialty differentials.
- Work with other state medical societies and the Iowa congressional delegation for elimination of geographic inequities in Medicare payments.
- Refer to the IMS Board of Trustees the issue of impediments to development of small hospices.
- Refer to the Judicial Council the question of specialty advertising, with a report to be submitted to the 1990 House of Delegates.
- Reaffirm support of legislation mandating that all public buildings be smoke free.
- Support legislation increasing the tax on tobacco products.
- Refer to the IMS Board of Trustees the question of requiring notations on death certifications stating if alcohol, tobacco, cocaine or other drug use contributed to the death.
- Commend those responsible for developing the adolescent alcohol impaired driver program operating in Polk County.
- Direct investigation of the extent to which athletic insurance is available to Iowa's athletes and develop appropriate recommendations.
- Support the concept of the Polk County Reality Education Alcohol Prevention Program.
- Assist in development of adolescent alcohol impaired drivers' prevention programs in other communities.
- Support increased taxes on alcohol.
- Support an impaired driver alcohol level of .05%.
- Support a requirement for warning messages on alcohol advertisements.
- Support educational efforts on the hazards of drunk driving.
- Direct the Board of Trustees to monitor the malpractice liability climate so tort reform may be introduced when appropriate.
- Support additional meaningful tort reform, including caps on non-economic damages.
- Affirm that IMS representation of the IFMC Provider Advisory Committee be fully utilized by member physicians to convey concerns.
- Monitor the new Medicare professional review organization rating system implemented by the IFMC and report to the 1990 House of Delegates.
- Support Iowa's law relating to requests for procurement of organs and tissues.
- Initiate legislation to protect the public from artificial ultraviolet light, including requiring posting of warning signs near tanning devices.

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A Decade of Legislative Efforts

CLARENCE H. DENSER, JR., M.D.
Des Moines, Iowa

Clarence H. Denser, Jr., M.D. recently completed 10 years as chairman of the IMS Committee on Legislation. In recognition of his outstanding contribution in this leadership position, the 1989 House of Delegates expressed heartfelt thanks to Dr. Denser for his commitment and dedication. Following are excerpts from Dr. Denser's report to the House, in which he summarizes a decade of IMS legislative efforts and some of the pains and pleasures of involvement in this crucial program.

THE ENVIRONMENT IN WHICH physicians practice and the IMS represents its members is different from 10 years ago. In 1979, Republicans controlled both houses of the Iowa legislature. Given our close working relationship with Republican leadership, the defeat or passage of legislation was often a matter of talking to the committee chairperson.



ClarenceDenser,Jr.,M.D.

The conservative bent of most Iowa business people and physicians resulted in a similarity of interests evidenced by agreement on most legislative issues. Hospitals and physicians worked closely on most questions before the Iowa legislature. Neither the state nor federal government had a particular interest in Medicare or Medicaid expenditures.

With the turn of the decade, change occurred rapidly. Governor Ray appointed a commission on health care costs and its report was released in the spring of 1982. The report provided for the first time a focal point for business, labor and government to rally their interests and energy on the health care system. The creation of the Health Policy Corporation of Iowa closely followed and with it began organized advocacy of business and labor positions on socioeconomic health care issues.

In 1982, Democrats gained control of the Iowa legislature. Many physicians distrusted the Democratic majority and many newly elected young Democrats mistrusted Iowa physicians. It was no longer possible for representatives of the IMS to address legislative problems through leadership and committee chairpersons. It became necessary to develop positions and convey them through lobbyists and established relationships between physicians and lawmakers at home. The mistrust has been replaced by good working relationships between Iowa physicians and legislators of both parties.

Throughout the decade, allied health care practitioners unleashed on Iowa lawmakers an onslaught of proposals for licen-

sure, expanded scope of practice and insurance mandates, buoyed by the public's declining belief that only physicians can diagnose and indicate appropriate treatment.

Though it remains strong, even our alliance with the Iowa Hospital Association has become strained on occasion by competition between physicians and hospitals to provide certain medical services and the declining ability of government to fully fund Medicare and Medicaid.

We are all aware of the devastating effects of the liability crisis. The effort necessary to address this problem drained the IMS of its ability to fully address other important issues for 3 legislative sessions. Our efforts on this issue also unified lawyers, as documented by the latest campaign finance disclosure report. In the 1988 election cycle, the Iowa Medical Political Action Committee was outspent by 2 lawyer PACs. Further efforts to improve Iowa's liability climate through legislation will be met with fierce and organized resistance.

State and federal governments are scrutinizing medical practices to an unprecedented degree. Cost and utilization of our services are suspect in the face of unrelenting increases in health care costs. Whether it be capping our fees, imposing practice parameters or looking north to Canada, state and federal lawmakers are poised to actively assist us in controlling health care costs.

As we enter the 1990s, societal trends are pointed opposite many of our most heartfelt beliefs. Former allies have become adversaries and traditional adversaries have become better organized and more sophisticated. Despite the challenges, there is opportunity. The IMS is poised to meet these challenges. We have had to change our way of thinking and the way we do things. These changes have occurred subtly through the 80s. Following are some changes which have occurred in structure, PAC philosophy, legislative strategy and most important, the dedication of physicians.

In 1980, the IMS legislative staff consisted of a contract lobbyist and 2 administrative assistants. Today the legislative staff consists of a director, 2 contract lobbyists, a combination staff lobbyist and field representative and 2 public affairs staff persons who also function as lobbyists.

In 1980, legislative involvement was limited to the Committee on Legislation and a small cadre of legislative contact physicians. Today, specialty society representatives are invited to participate in all meetings of the Committee on Legislation. Additionally, each specialty is asked to designate a legislative liaison representative to assure issues of interest to the specialty society are conveyed promptly so the society's reaction to the issue can be obtained and incorporated into IMS strategy.

'Another important change during the past decade is our increasing emphasis on positive public health issues.'

Ten years ago, the auxiliary had no role in the IMS legislative program. Today, the auxiliary and its members are an important cog in our legislative machinery. Many auxiliary members now serve as legislative contact persons. The auxiliary has created a legislative phonebank to generate a high volume of mail or phone calls from our legislative contact persons within hours.

The auxiliary is proposing an internship program whereby legislators may follow a physician through his or her daily practice routine. The intent of this program will be to give legislators a clearer understanding of the complexities of medical practice.

As we enter the 1990s, the IMS legislative contact program is stronger than ever. The number of dedicated physicians and auxiliary members who serve as LCPs has grown. The LCPs are better informed, have better established relationships with the legislators and have better staff support.

In 1979, there were 116 PACs active in Iowa. Today there are 226. In 1979, there were 2,000 federal PACs. Today there are 4,268. Advocacy organizations such as the IMS need a well organized, well funded PAC just to stay even. In the beginning of this decade, PAC solicitation was limited to the IMS dues statement and the IMPAC booth at the House of Delegates meeting. The suggested contribution was $35. Today,

(Continued next page)

the dues statement is supplemented by a sophisticated direct mail program and the suggested contribution is $100. Currently, one-fourth of IMS members participate in this important corollary activity.

More important has been the refinement of PAC dollars distribution. Ten years ago, PAC giving decisions were based on limited staff research. Today, each candidate's credentials are thoroughly researched by staff. In competitive races, each candidate is interviewed by constituent physicians. Interviewing physicians establish a relationship with the candidate, the candidate is familiarized with issues of concern to the IMS and better information is provided to the IMPAC board.

'In 1979, there were 116 PACs active in Iowa. Today there are 226. In 1979, there were 2,000 federal PACs. Today there are 4,268.'

These refinements have had surprising results. IMPAC contributions to Democrats running for election to the Iowa legislature have been nearly equal to those provided to Republicans in the last 2 elections. Political pundits strongly believe Iowa Democrats have done a better job of securing high quality candidates than Republicans. IMPAC giving, based in large part on the advice and counsel of constituents physician, reflects this development.

A strong possibility exists Democrats will control the Iowa legislature through the coming decade. Movement from a perceived Republican PAC to a truly bipartisan PAC has been beneficial to our legislative program. As a result, the IMS now works closely with the leadership of both parties. We have earned the trust of Democrats while retaining the trust of Republicans. It is essential that IMPAC continue as a truly bipartisan organization.

The greatest mistake an organization or individucal can make in any adversarial legislative setting is not knowing when to back off. Defeat is a bitter pill — your board of trustees doesn't like it, your staff and lobbyists don't like it and the Committee on Legislation doesn't like it. But when the vote count won't change, there is no sense in continuing to press the issue. In such cases, with the concurrence with the Board of Trustees, we have generally tried to obtain the most favorable concessions possible and moved to the next issue.

This philosophy, while distressing in the short run, is beneficial over time. Given the intense scrutiny of health care, it is important that legislators invite the IMS to participate in their deliberations. We are being invited to participate in discussions of critical interest significantly more often than in the past. We have become and will continue to be a major player on many critical issues, given our enhanced credibility with Iowa lawmakers of both political parties.

Another important change during the past decade is our increasing emphasis on positive public health issues. Many issues of primary concern to the IMS are defensive in nature or are perceived as pocketbook concerns. The IMS has placed great emphasis on such issues. However, over the past several years, the IMS has been an active player on a number of positive health issues. This year, the IMS is a significant contributor to legislation relating to AIDS, civil commitment, the uninsured problem, infectious wastes and environmental and agricultural health issues. The participation of Iowa physicians in such issues is good for the public and a responsibility we should not shirk. An increased commitment to such issues has enhanced our credibility on other issues.

The IMS may hire hoards of staff and lobbyists, raise huge amounts of PAC dollars and prioritize all the positive issues it wants; but without active legislative participation by physicians and auxiliary members at home, there is no legislative program. This is the area of greatest improvement during the past decade.

The response of physicians and auxiliary members has been overwhelming. They are willing to get in the trenches; be active in political campaigns; meet their legislators, know them and appreciate them; and respond promptly to requests for the advocacy of IMS positions. Their dedication has been the key to our improvement and will continue to be the key to our legislative program in the 1990s.

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Paul J. Leehey, M.D.

Questions and Answers



Twenty-five Years in The House of Delegates

The author, a family practice physician and IMS Life Member from Independence, discusses his 25 years as a delegate to the IMS House of Delegates.

How did you first become a delegate to the IMS House?

I always attended the Society's annual Scientific Session and then would sit in on the House of Delegates sessions because they were interesting. The other members of the Buchanan County Medical Society decided I might as well be a delegate since I attended anyway.

Why have you served as a delegate for so many years?

I've always thought it was very worthwhile. When you participate in the House sessions, you really find out what's going on at the IMS. It's also a good way to learn about the latest issues facing medicine, especially the socioeconomic issues.

What has been the most controversial issue you've seen discussed by the House?

I'd say third party reimbursement has been the most controversial over the years. I remember one year there was a special delegates session called in February to discuss Blue Cross/Blue Shield. The meeting began early in the morning and was still going on when I left at 6 p.m. It was snowing like heck and I wanted to get back home.

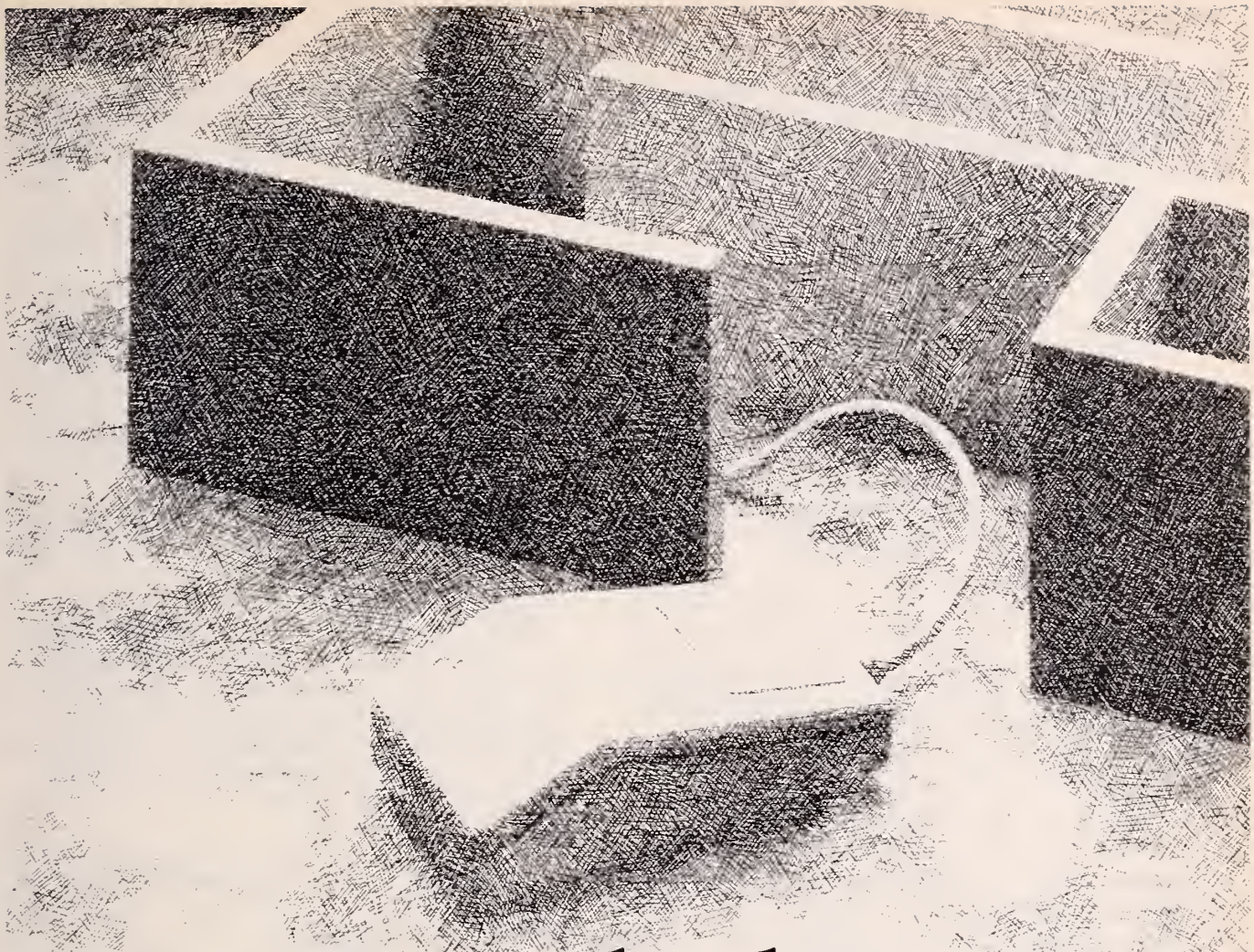
What is the funniest thing you ever saw happen?

The funniest thing I remember is all the stories Dr. Elmer Smith used to tell whenever he had the opportunity. In addition to being a well-respected and knowledgeable delegate to the AMA, he told real good stories and we all missed him in the House sessions when he passed away.

How has the House changed since you began attending?

There has been incredible change in the health care system since I first became a delegate. With the advent of the third party payment system, many new problems have come before the House involving Medicare, Medicaid, the IFMC and countless others. Also, there are many more committees which deal with new problems and issues such as organ transplantation, oncology and troubled physicians.

As one of the older IMS members, I urge young physicians to join the IMS and become involved as a delegate and on the many different committees. Involvement in the IMS is a gratifying and educational experience and we need younger physicians to take up the reins.



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Student Knowledge of the AIDS Epidemic

MARY TAGGART, Ph.D.
MARY KHOWASSAH, M.D.
Iowa City, Iowa

Dr. Taggart, an assistant professor in the University of Iowa's graduate program in hospital and health administration, and Dr. Khowassah, director of student health services, present results of an AIDS survey given to U of I freshmen.

SEXUAL BEHAVIOR OF COLLEGE STUDENTS is an area of concern for university health service administrators. Questions of STD, birth control and abortion often arise for the first time during the college years.

A study was undertaken by the student health service of the University of Iowa to gauge students' AIDS knowledge. Although AIDS is rare among 13-19 year-olds, it is more prevalent among 20-29 year-olds. The degree of sexual experimentation in this age group suggests the rate of disease transmission could exceed its reported rate.

Recent surveys suggest minority adolescents, particularly Blacks and Latinos, possess less knowledge about AIDS than white adolescents. Variability in knowledge about precautionary measures among adolescents of all ethnic groups was also uncovered. Previous surveys of the college population find high to moderate knowledge of the AIDS epidemic.

Method

Data were collected in November, 1987 from 1,103 University of Iowa freshmen. Ages ranged from 17 to 26; 42.8% were female and 57.2% male. Thirty-two percent of the students were from out of state, mainly Illinois.

Results

Overall, U of I freshmen possess a high level of AIDS knowledge. Students performed best on the knowledge AIDS is not transmitted through casual contact, on what the acronym AIDS stands for and on educational strategies to combat AIDS. There were also high marks on knowledge of non-homosexual risk groups and the danger male bisexuality poses.

The students were less knowledgeable about causes of death associated with AIDS.

There were sex differences in level of AIDS knowledge, with males performing more poorly than females. Males were much more likely to state, incorrectly, that the AIDS virus is very robust.

Male students were also less knowledgeable about AIDS warning signs and the sensitivity of the ELISA test.

Conclusion

The results of this survey suggest college students at a large nonmetropolitan university have a very sound understanding of the AIDS epidemic. The findings also suggest female college students possess greater understanding of AIDS.

Letters to the Editor

Wants Feedback on Novel

Dear Editor:

I have written a novel of contemporary significance and I would like to turn it over to a group of social-minded physicians to see if they can market or publish it. The manuscript is available for anyone who wishes to read it. The title is *Reunion* and the book is structured around 2 events — a 10-year high school reunion in 1978 and a 20-year reunion in 1988.

The story follows a young physician from age 21 to age 40 as he attempts to maintain his equilibrium in the moral quicksand of that period. The thesis of my book is that a life-style which is destructive to the point of genocide should not be advocated. My book advocates the opposite life-style — sexual monogamy as the only means of protecting children from the destructive effects of the broken home.

Anyone interested in pursuing this subject is welcome to a copy of the manuscript. — *Clinton E. Berryhill, M.D., Williamsburg, Iowa.*

IFMC Peer Review Criticized

Iowa's peer review organization threatens quality medical care. Its assertions are burdened by cost concerns because it must march to the beat of the Health Care Financing Administration (HCFA). Peer reviewers have relinquished single-minded dedication to what's best for the patient and, therefore, their opinions cannot be trusted. Practicing physicians must learn to suppress the influence of the Iowa Foundation for Medical Care (IFMC), just as they have learned to control other external pressures which may adversely affect patient care decisions.

The IFMC has touted itself as an educator of physicians, but it has failed. Peer review can occur between peers but education can only occur between teacher and student. If a physician reviewer declares his peer wrong (or right), theoretically the reviewer will be correct only 50% of the time. That's what "peer" means. A good teacher introduces himself and lists his qualifications. He doesn't disparage his students while cowering behind the wall of anonymity.

With unearned authority, IFMC reviewers are quick to make the easy judgement from the certainty of hindsight.[1*] Such a painless, artificial exercise commands little respect. It's like playing tennis with the net down, like writing poetry without rhyme.[2]

Many practitioners dislike peer review but are resigned to some form of government control. "It's the law, might as well make the best of it. At least physicians must be in charge of the process." These physicians have surrendered to HCFA, which is more interested in cost control than individual patient welfare. But physicians cannot

(Continued page 337)

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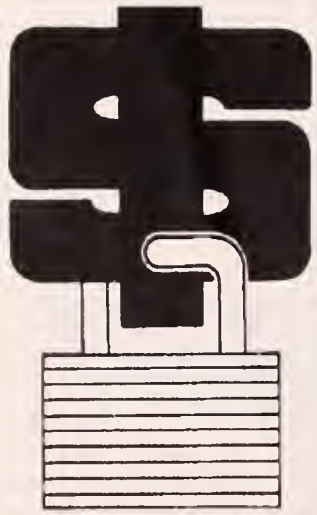
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"serve two masters."[3] In 1940 the Vichy government in France was the law. How much better to have French Collaborators running France rather than the Germans. The Resistance didn't buy it.

What is the answer to runaway medical costs? Research and education. The research must be conceived and directed by caring physicians who seek the truth about what constitutes good medical practice (whether cheap or expensive). Better care is often cheaper.[4, 5, 6] Better educated physicians will not require a multitude of tests to bolster their bedside diagnoses. Education is more effective than regulation in changing physician behavior.[7, 8]

Physicians must not betray their patients' trust. Research and continuing education must guide patient care decisions — not the Iowa Foundation for Medical Care. — *John Ely, M.D., Lake City, Iowa.*

References noted in this letter are available from the author or the editors of IOWA MEDICINE.

Enjoys 'CME Notebook'

Dear Editor:

As always when my copy of *IOWA MEDICINE* arrives, I read Dr. Caplan's 'CME Notebook' column first. The May column really struck home . . . "There is so much to learn."

Thanks for Dr. Caplan's always timely thoughts. They really help physicians who are trying to "keep up." — *William Hofmann, M.D., Davenport, Iowa.*

New Medical Museum

The medical museum at University of Iowa Hospitals and Clinics opened February 26. Artifacts and photographs in the opening exhibit illustrate the history of Iowa medicine and the history of UIHC. Much of the museum's collection has come as a result of the generosity of Iowa physicians and nurses, physician and nurse alumni of the University of Iowa, their families and other health professionals. However, museum directors are still looking for various items to fill out the collection.

The current exhibit, "Closing in on Cancer," was prepared by the National Cancer Institute, Bethesda, Maryland, in celebration of the 50th anniversary of its founding. "Closing in on Cancer" traces the study and treatment of cancer from the ancient Egyptians to the present, outlining the contributions of individuals who have devoted their efforts to the study of cancer throughout the centuries. The walk-through exhibit combines written text with narrated videos to give an overview of the history of the disease. It will run through January of 1990.

The medical museum is open Monday through Friday from 8:00 a.m.-5:00 p.m. and from 1:00-4:00 p.m. on weekends. It is located on the 8th floor of the John W. Colloton Pavilion at the University Hospitals and is free and open to the public. For more information, please contact Adrienne Drapkin, Director, Medical Museum 319/356-7106.

Physician Speakers Needed

The Iowa Coalition for Comprehensive School Health Education (ICCSHE) is establishing a speakers bureau. It will consist of individuals from health industries throughout Iowa who are available to give health related presentations to school classes and assemblies.

ICCSHE wishes to identify Iowa physicians and other health care professionals who have had experience speaking before lay groups to join the speakers bureau and address school age children. Possible subjects include AIDS, sexuality, nutrition, smoking, teen pregnancy, enhancing self-esteem and physical fitness.

Presentations are usually an hour in length and can be enhanced by visual aids. Speakers will not be asked to travel long distances. If you are willing to participate or if you would like more information, contact Leslie Weber, M.D., 2108 Steindler Bldg., University of Iowa, Iowa City, IA 52242.

Please include your name, address, subject area you would like to speak about and whether you may have visual aids.

Recent Books

Schaub, Gary R., 1989, *Selling or Buying a Medical Practice,* Medical Economics Books, Oradell, New Jersey, $31.95. The author of this book is a practice management consultant and appraiser. He presents a concise review of the ramifications of practice sales and purchases. Step by step the entire subject is examined from "should I and can I" to "I did it successfully and wisely." Having retired and sold my practice during the past year, I can attest this book is a valuable reference to any physician anticipating such a complex management decision as selling or buying a medical practice.

Fish, Raymond M. and Melvin E. Ehrhardt, 1989, *Preventing Emergency Malpractice,* Medical Economics Books, Oradell, New Jersey, $31.95. Emergency medical care, whether in the hospital or in the office, presents challenges to the physician in many medical-legal issues. This book, well written and concise in the discussion, is a true eye-opener. Emphasis is placed upon numerous issues which more frequently have instigated legal action. Five conditions more frequently associated with lawsuits are myocardial infarction, meningitis, wounds, fractures and appendicitis. This book is highly recommended for complete study by all physicians as well as managers of hospital emergency rooms.

Alexander, Steven R., editor, 1989, *Patient Care Flowchart Manual,* 4th edition, Medical Economics Books, Oradell, New Jersey, $52.95. This is a unique manual, neither a textbook nor a true reference book. Herein are more than 300 flowcharts to guide the physician in the care of as many conditions. These presentations are classified by organ-systems as well as by specialty groupings. These flowcharts may approach a given condition by differential diagnosis and/or management. The orderly presentations provide physicians with a concise means of diagnostic and therapeutic possibilities. Suggestion has been made that insertion of a copy of a given flowchart in the patients' chart affords better record-keeping of the physicians' thought process in arriving at a diagnosis — stepping stones to successful management and away from potential lawsuits.

Gendron, Francis G., 1989, *Unexplained Patient Burns: Investigating Iatrogenic Injuries,* Quest Publishing Company, Brea, California, $60.00. The author, a clinical engineer responsible for medical devices and instrumentation, contends that "most inexplicable burns are not burns, but expected physiological responses to a set of factors peculiar to the surgical and obstetrical environment — factors that are inherent in the clinical environment." He gathers incidents, investigations, reports and legal actions and puts them together in his solution to the cause of unexplained burns. Considerable research has gone into this book. The hypothesis develops that so-called burns are in reality "tissue insults precipitated by the agency of pressure and accelerated by heat." Its message will be of special interest to surgeons, anesthesiologists and obstetricians.

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Brief Summary

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Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* – 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests – False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions – No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility – A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice; although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy – Teratogenic Effects – Pregnancy Category C – Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers – Studies conducted in lactating women have shown that $<0.1\%$ of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use – Safety and effectiveness in children have not been established.

Use in Elderly Patients – Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic – Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular – In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS – Rare cases of reversible mental confusion have been reported.

Endocrine – Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic – Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental – Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity – As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other – Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage: Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms – There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment – To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

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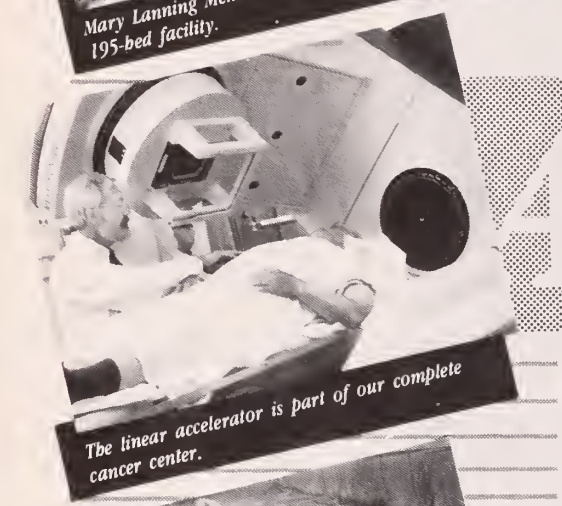
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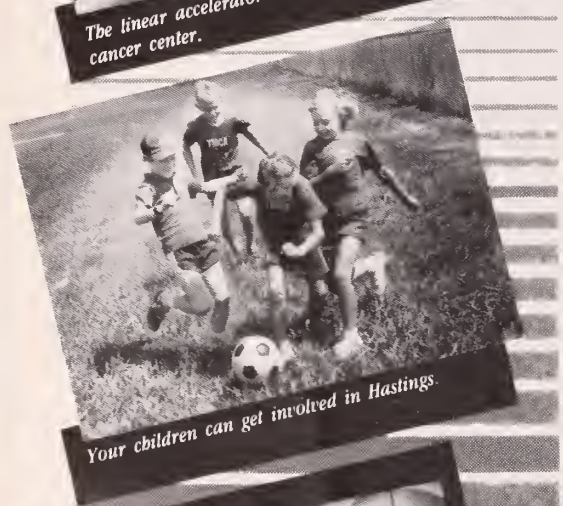
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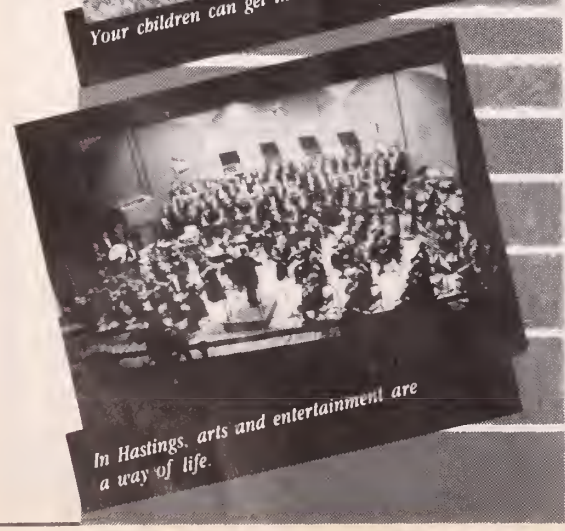
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Mental Illness, Lymphoma and Scianna Antibody

DAVID W. GAUGER, M.D.
JAN KEENAN, M.T. (ASCP)
Des Moines, Iowa

The authors present a complex case of mental illness and large cell lymphoma complicated by difficulties finding compatible blood. The patient also had a history of non-compliance in psychotherapy.

THIS ARTICLE PRESENTS A COMPLEX diagnostic and medical management problem in which a Scianna antibody is felt to have complicated hemotherapy. The discussion reinforces the fact people with lengthy mental illness develop serious organic disorders that are often difficult to diagnosis and manage due to problems inherent in patients with pre-existing mental illness.

The patient, a 64-year-old black female, complained of left upper abdominal sharp pain of 2½ weeks duration. It worsened with deep breathing but did not radiate. She denied nausea, vomiting, fever or chills; but she did have a reduced appetite. She had microcytic anemia that had been recently diagnosed and treated with iron therapy.

On examination, a 6 × 8 cm firm mass was detected in the left upper quadrant. Chest and abdominal x-rays were negative. The patient, who had a second grade education, reported a 40-pound weight loss over the past 6 months which she stated was intentional due to encouragement by her physician. Past medical history was remarkable for exogenous obesity.

She had a history of bipolar mental disease with hypomania and psychotic features requiring several admissions to psychiatric units. There was a history of hypertension. She was reportedly treated for syphilis in 1950. In 1971, she underwent a hysterectomy, appendectomy and rectocele repair. She is believed to have received blood at this time. She had children and a history of medication noncompliance with antipsychotic therapy.

She was admitted to the hosptial for evaluation. A CT of the chest showed right axillary adenopathy and left pleural effusion. CT of the abdomen revealed significant enlargement of the spleen with focal areas of low density scattered throughout. This was interpreted as being consistent with a malignant lymphoma of either the histiocytic or non-Hodgkin's type. Periaortic lymph nodes were seen.

While the patient was being evaluated, there was evidence of GI bleeding and the

Dr. Gauger is a pathologist practicing in Des Moines. Jan Keenan is blood bank supervisor of Broadlawns Medical Center in Des Moines.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR JULY 1989

hemoglobin was in the 6 gram range. GI bleeding studies showed findings consistent with active or intermittent acute bleeding process involving the upper stomach or possibly distal esophagus. It was decided to give the patient blood transfusions. There appeared to be an antibody present that represented an antibody to an antigen of high incidence related to the Scianna system in a patient with depressed Scianna antigens. Five "least incompatible" units were given over 3 days. The patient appeared to tolerate these transfusions well.

'Neither transfusion reactions or hemolytic disease of the newborn have been associated with the scianna system.'

The patient then had further diagnostic workup. A bone marrow and right axillary node examination were both normal. A biopsy of the lesser curvature of the stomach was interpreted as representing a large cell lymphoma. A wedge biopsy of the liver was interpreted as representing a large cell lymphoma. In addition, her gallbladder was removed due to cholelithiasis. She tolerated the surgical procedure well.

No blood was given during the time of the operation or post-operatively. After recovery, she was placed on chemotherapy for the lymphoma. To date, she is alive and doing well approximately one year after surgery. The total length of hospitalization for diagnostic workup and surgery was about 6 weeks.

The blood banking antibody is felt to represent an antibody from the Scianna blood group system. The Scianna system evolved in 1974 from serological and genetic work done by Lewis et al at the RH laboratory in Winnipeg. Encompassed in the Scianna system is the Sm system reported by Schmidt in 1962 and the Bu^a system reported by Anderson in 1963. Scianna is a family name. It appears the Scianna group, like several other blood group systems, can transiently lose antigen activity and antibody production can occur during this time. Neither transfusion reactions or hemolytic disease of the newborn have been associated with the Scianna system.

Conclusion

The blood banking problems provided an opportunity to become familiar with the Scianna blood group system. Due to the difficulty in finding compatible blood, the patient underwent surgery, post-operative recovery and lymphoma chemotherapy without further blood transfusions. In conclusion, it should be remembered antibodies can spontaneously develop during the course of lymphoproliferative diseases. These antibodies have usually been reported to be IgM antibodies usually reactive to the I antigen.

SCIENTIFIC ARTICLES

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Marion E. Alberts, M.D.

The Editor Comments



Success

Success, remember, is the reward of toil.
—Sophocles (495-406 BC) *Electra* 1:945.

A VERY DELIGHTFUL ESSAY on the price of success appears in the May 25, 1989 issue of *The New England Journal of Medicine.** Sir William Osler left Johns Hopkins University in 1905 at age 55 to become the requis professor of medicine at Oxford. His remaining 14 years of life became a "more suitable lifestyle in a position that brought him continued fame, but at less cost."

Osler, the teacher, the consummate student, researcher, consultant, writer, bibliophile and executive, had reached a point in his active life that he feared a "breakdown." His workload, as we would call it today, was enormous. His fame had become worldwide as his accomplishments became more and more outstanding. The decision to leave Johns Hopkins would afford him a respite from his duties to a more leisurely, albeit a still productive life, at Oxford University.

Osler personified a quotation I once read that "stature comes not with height but with depth." His diversity of medical activities attest to the depth of Osler's impact upon medicine. That impact will last for decades. By such depth, the stature of the man became imminent. Yet, such attributes of great works need not be the history of one man. Each decade produces numerous physicians of noteworthy abilities but by reason of time and place their successes are not known to the extent as those of Osler. Yet success need not be measured by worldwide acclaim, for often the measure of success is quiet day-by-day accomplishments. The devoted practitioner in a small town is as much a success but without the fanfare.

In recent years there have been more professionals who are able to "retire" at the age of 50-55 years and then enter into a different mode of life. In a manner of speaking, Osler at age 55 was ahead of his time. He entered a new way of life to escape the penalties brought on by enormous success. The decrease in the demands of practicing, consulting and teaching provided more time for his historical and literary pursuits. The pace was less hectic. His emotional and physical health gained a reprieve and for that we are all the more recipients of his wisdom. The price of his success was not that severe, for Johns Hopkins' loss of a reknown professor of medicine was a gain for Oxford, and the world of medicine lost nary a bit.

The experience of Osler can be an example for all in our busy professional lives. Success is measured in accomplishments. When a peak is reached bask not in glory and self-exhaltation. Seek a new goal, a new peak to reach but perhaps with less expenditure of physically and mentally exhausting efforts. Life then becomes a continuum of worth, not a disaster of unworthy existence. Seek continuing success in a measure that is equal to abilities once attained. Then, the shadows of declining years will not be threatening to a sense of emotional and physical well-being. — *M.E.A.*

* Fye, WB: William Osler's departure from North America: The price of success. *N Engl J Med,* 1989;320:1425-30.

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Your patients are consumers who have basic expectations. How do you know if you are meeting their expectations? One method of gauging patient satisfaction is to conduct a patient survey.

By randomly selecting patients and asking them to provide feedback about the care they received, the friendliness, politeness, efficiency and compassion of support staff, your facility, cost of services, billing, appointment scheduling, waiting time and other service attributes, you can identify areas where your service is strong and areas which need attention. Gathering this information is relatively inexpensive yet it provides extremely valuable feedback to be used in defining the level of service demanded by your patients.

Allowing patients to assist in determining the level of service you and your staff deliver generally assures you are meeting the expectations of the patient. Without this information it is difficult to assess potential problems. Unknown problems could be leading your patients to another health care provider.

To conduct a patient satisfaction study, you will need to develop a questionnaire which addresses the important aspects of your service. It should include both questions with multiple choice responses and open-ended questions which allow patients to more fully express their views. The questionnaire should be kept to 2 pages or less.

Randomly select patients who will receive the questionnaire. Not all who receive the questionnaire will return it; expect only about a 20% return. Depending on the size of your patient base, select enough patients to provide between 40 and 150 completed questionnaires. These numbers will provide a solid base of data with which to work. Based on a 20% return rate, you will need to mail out between 200 and 750 questionnaires. If your patient base is relatively small, mail a questionnaire to all patients.

The questionnaires should be mailed with a postage paid reply envelope and a cover letter explaining the purpose of the survey and the confidentiality of patients' responses. Expect completed questionnaires to begin coming back in 2 to 3 days and the bulk to be returned within 10 days.

When compiling the results of your survey, try to express all multiple choice responses in percentage terms. In other words, for each question, calculate the percentage that each response category represents of the total responses. Expressing results in percentage terms will make interpretation easier.

Interpreting the results of your survey will require a critical look at the service you provide. You are in a service business. If the results don't indicate you are providing service which is excellent or outstanding, there is work to be done. The important thing to keep in mind is your patients expect nothing less than excellence. Use the results of the survey to correct any service deficiency and you will go a long way toward satisfying your patients.

This article was authored by David Arringdale, a senior marketing consultant with McGladrey & Pullen, Des Moines.

1989 Legislative Summary

PUBLIC HEALTH ISSUES are on the forefront of legislative debate. This year, Iowa Governor Terry Branstad approved a wide range of health-related legislation including updates to AIDS laws, controlled substances, emergency medical services, health professionals and insurance coverage. Also, regulations governing radon abatement, swimming pools and water treatment systems were enacted.

Many health-related proposals remain under consideration for the second session of the 73rd General Assembly in January 1990. Among issues to be addressed are updating Iowa's Certificate of Need program, surveillance of traumatic injuries and a proposed health profession review commission.

Following are health-related bills passed during the 1989 session and approved by the governor. A "SF" or "HF" prefix to the bill number denotes Senate File or House File, indicating the chamber in which the bill originated.

Health-Related Bills Passed

SF14 — License requirements for manicurists and for electrolysis. Bonding requirements for barber and cosmetology schools.

SF89 — Eliminates requiring the Iowa Department of Public Health to keep lists of accredited colleges that teach professions regulated by Chapter 147. Eliminates Board of Health approval of Barber/Cosmetology rules.

SF90 — Excludes students of dental hygiene from Code provisions governing the practice of dentistry.

SF96 — Removes sunset clause for the Health Data Commission, prohibits requiring hospitals with fewer than 100 beds to install severity of illness systems; adds Code language regarding contracting for services.

SF112 — Code Editor's (non-substantive). Non-substantive changes to Code of Iowa including chapters 135, 136 and 147.

SF122 — Requires permit for the tattoo practitioners. Authorizes Iowa Department of Public Health to adopt rules and administer section. Prohibits giving tattoos to anyone under age 18.

SF141 — Code Editor's (substantive). Specifies "HIV-related" test regarding AIDS testing protocol (Ch. 141.22).

SF363 — Supplemental appropriations. Adds $26K to FY89 funds covering medical exams resulting from sexual abuse and for preventing sexually transmitted disease.

SF395 — Adds certain substances to schedule I, schedule IV, and schedule V controlled substances.

SF410 — Permits Human Immunodeficiency Virus (HIV) Epidemiological Blinded Study.

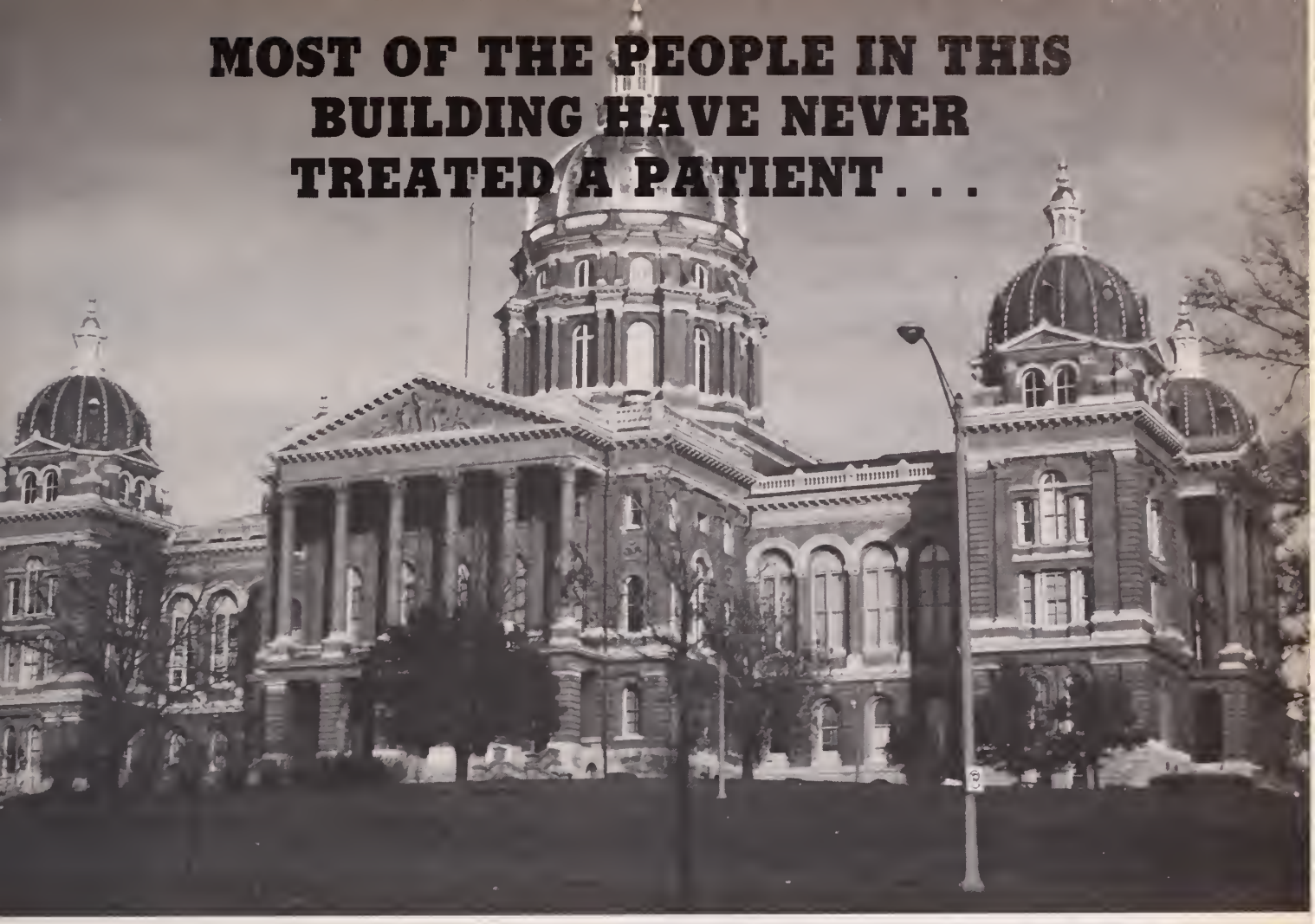
SF490 — Provides for third-party evaluation of test data on water treatment systems.

SF512 — Establish the Iowa Emergency Response Commission. The Commission will establish local emergency planning committees and appoint its members. The Commission will perform all other functions and duties specified in the Federal Emergency Planning and Community Right-to-Know Act.

SF521 — Federal Block Grants. Appropriates $13.4 million in federal funds for alcohol, drug abuse and mental health services; maternal and child health services; preventive health and health services; and Drug Control and System Improvement Grant Program.

(Continued page 348)

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.



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SF522 — Expands the Radon Program to include credentialing of persons abating the level of radon in buildings.

SF538 — Omnibus Health Bill: Incorporates several health initiatives including expanding maternal and child health services (along with technical changes in program administration); increases Medicaid eligibility; establishes an office of rural health; expands public health nursing and homemaker health aide programs; provides funding for child health care; and requires various studies.

SF540 — Relates to Human Services statutes regarding commitment of juveniles: the juvenile court has exclusive jurisdiction for substance abuse commitment proceedings for minors.

HF199 — Mandates health insurance coverage for mammography examinations after July 1, 1989.

HF343 — Rewrites the Iowa Drug, Device and Cosmetic Act. Major provisions allow for conforming with federal act.

HF344 — Reorganization clean-up. Allows Iowa Department of Public Health to require substance abuse treatment programs in hospitals to be either licensed or accredited. Allows for a fee to cover costs of licensing private substance abuse programs.

HF371 — Emergency medical services: Allows First Responders to use automatic defibrillators, updates terminology and requires emergency care providers to report suspected dependent adult and child abuse.

HF373 — Authorizes Iowa Department of Public Health to establish safety and sanitation standards for swimming pools and spas including operator requirements.

HF430 — Authorizes the appointment or designation of a city health officer.

HF585 — Relates to guardians and conservators. Provisions include formation of state and local emergency medical boards.

HF641 AIDS — Provides for notifying a third party by physicians whose patients have tested HIV positive. Calls for a model pamphlet by Iowa Department of Public Health on testing provisions. Allows for testing of emergency responders in case of exposure.

HF644 COLLEGE AID COMMISSION — Adds nurses and physicians to those eligible for reimbursement payments under the guaranteed loan payment program. Modifies provisions for occupational therapists under the same program.

HF717 — Residency requirement for podiatrists.

HF722 — Relating to infectious waste management. Requires the Department of Natural Resources in cooperation with Iowa Department of Public Health to institute an infectious waste management program by making recommendations.

HF729 — Relates to insurance coverage for health services provided by certain registered nurses and providing for direct payment. Other provisions relating to preferred providers and providing for data collection and utilization review.

HF735 — Relates to Enhanced 911 Emergency Telephone Communications Systems. Provides for local referendums before imposing a surcharge to pay for 911 service.

HF774 — Appropriations to educational and cultural programs. Appropriates funds to the nursing home program. Also, funds to the University of Osteopathic Medicine and Health Services and grants for its students.

HF775 — Appropriations to the Iowa Department of Public Health, Civil Rights, Elder Affairs and the Blind. Approximately 30.5 million state dollars are designated for Public Health.

HF779 — Appropriations to regulatory bodies of state government: the state auditor will be reimbursed for examinations. Revises provisions dealing with long-term care insurance coverage.

HF780 — Drug control bill: Establishes a drug enforcement and abuse prevention coordinator; several advisory councils; transfers the Governor's Alliance on Substance Abuse from Iowa Department of Public Health to the new coordinator; appropriates funds for enforcement and for treatment in corrections; increases penalties for drug trafficking; provides for wire tapping parameters.

HF785 — Making appropriations from the Iowa Plan Fund (Lottery Bill). Provisions included rural development funding; a $250,000 research grant through Iowa Department of Public Health to study heart pumps; and $1.5 million to the Office of State Treasurer for emergency medical services equipment.

To obtain copies of these bills, contact the Legislature's public information office at 515/281-5129.

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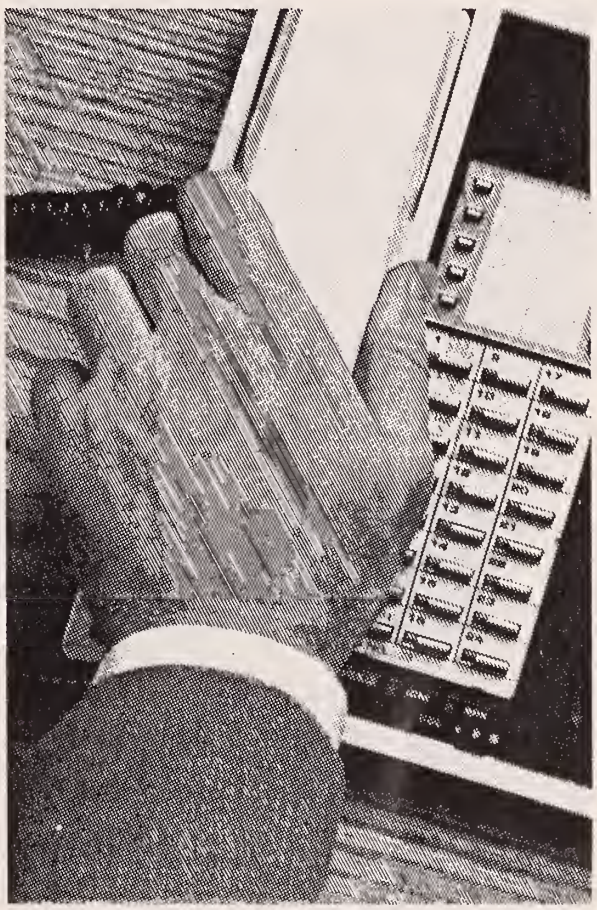
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About Iowa Physicians

Dr. Randy Asman has joined **Drs. Robert Hranac** and **Douglas Stangl** at Estherville Medical Clinic. Dr. Asman received the M.D. degree from the University of Minnesota Medical School, Minneapolis, Minnesota and served his residency in Sioux City. Prior to locating in Estherville, Dr. Asman practiced in Melrose, Minnesota for 3 years. **Dr. Robert Melgaard,** Dubuque pediatrician, has resigned as president and chief executive officer of Medical Associates Clinic P.C. in Dubuque after nearly 12 years in that position. **Dr. Ross Madden** will serve as interim president. **Dr. Ronald Abbott** has joined **Drs. Kenneth Zichal** and **David Cranston** on the staff of Elkader Medical Associates. Dr. Abbott has spent the last 12 years in emergency room medicine at St. Francis Hospital in Waterloo. **Dr. Charles Wirtz** has joined the Monroe Clinic in Monroe, Wisconsin. Dr. Wirtz had practiced in Humboldt since 1987. **Dr. David Kapaska** has joined Medical Associates of Sac City. Dr. Kapaska received the D.O. degree from the University of Osteopathic Medicine and Health Sciences, Des Moines and completed his family practice residency at Iowa Lutheran Hospital, also in Des Moines. **Dr. Kenneth McMains** has been named medical director of Occupational Health Services at Allen Memorial Hospital in Waterloo. Dr. McMains had practiced at the Main Street Family Practice Clinic in Denver for the last 8 years and also saw patients at the Family Practice clinics in Tripoli and Readlyn. **Dr. Steven Humphrey** has joined the staff at the Mercy Clinic in Valley West Mall, West Des Moines. Dr. Humphrey previously practiced

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at Perry Medical Center. **Dr. Robert Hill,** also formerly of Perry Medical Center, has begun medical practice in the state of Maine.

Deaths

Dr. E. Dean Thompson, 77, Jefferson, died April 20. Dr. Thompson received the M.D. degree from St. Louis University School of Medicine, St. Louis, Missouri, and completed a surgical residency in St. Louis. He began practice in Jefferson in 1945, retiring from active practice in 1983. Dr. Thompson was a life member of the Iowa Medical Society.

Dr. Arthur Shafer, 71, Scottsdale, Arizona, died March 2 at Scottsdale Memorial Hospital North. Dr. Shafer received the M.D. degree from the U. of I. College of Medicine and served his internship at Grant Hospital, Chicago, Illinois. He retired in 1974 after 14 years as medical director at Davenport Alcoa Works. Prior to that, Dr. Shafer was in private practice in Davenport.



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All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

The paper will be reviewed by the publications committee and a follow-up letter will be sent to the author, either accepting or rejecting the article.

All material is subject to editing by the staff copy editor to assure clarity and good grammar and to conform to *IOWA MEDICINE* style and format. The author will receive galley proof of the paper prior to publication to check for inaccuracies, but no rewriting may be done after the manuscript is set in galleys.

Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

IOWA MEDICINE accepts only material which has not been submitted or published elsewhere. When a paper is accepted for publication, the editors reserve the right to publish it when appropriate or when space is available. Papers submitted by IMS physician members are given first priority.

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FAMILY PRACTICE/INTERNAL MEDICINE/OB-GYN — Attractive opportunities (many on lakes) for BE/BC physicians in Michigan, Wisconsin and Indiana. Contact Bob Strzelczyk to discuss your practice requirements and these positions. Strelcheck and Associates, Inc., 12724 N. Maplecrest Lane, Mequon, Wisconsin 53092; 800/243-4353 or 414/243-9500 (Wisconsin) collect.

GENERAL INTERNIST — Marshfield Clinic, a multispecialty group practice with over 300 physicians, is seeking BE/BC general internist to join expanding regional centers. Practice opportunities range in size from multispecialty groups of 11 to 25. Positions available in 3 locations. One in northwestern Wisconsin, 90 miles from Minneapolis; one in northcentral Wisconsin in close proximity to the U. P. of Michigan and Lake Superior and one in central Wisconsin within 35 miles of Marshfield. Full specialty consultation readily available. Positions offer strong economic stability combined with exceptional recreational, cultural and educational opportunities. Starting salary up to $89,400 with salary in 2 years up to $113,100. Fringe benefit package is outstanding. Send CV and references to David L. Draves, Director, Regional Development, 1000 North Oak Avenue, Marshfield, Wisconsin 54449 or call collect 715/387-5376.

FAMILY PRACTICE — Marshfield Clinic, a multispecialty group practice with over 300 physicians, is seeking BE/BC family practitioners to join expanding regional centers. Practice opportunities range in size from single specialty groups of 3 to multispecialty groups of 25. Positions available in 6 locations. Two in northwestern Wisconsin within 70 and 90 miles from Minneapolis; 2 in northcentral Wisconsin within 80 and 90 miles of Lake Superior and 2 in central Wisconsin within 25 and 35 miles of Marshfield. Full specialty consultation readily available. Positions offer strong economic stability combined with exceptional recreational, cultural and educational opportunities. Starting salary up to $89,400 with salary in 2 years up to $113,100. Fringe benefit package is outstanding. Send CV and references to David L. Draves, Director, Regional Development, 1000 North Oak Avenue, Marshfield, Wisconsin 54449 or call collect 715/387-5376.

ORTHOPEDIC SURGEONS, WISCONSIN — Marshfield Clinic, a multispecialty group practice with over 300 physicians, is seeking BE/BC orthopedic surgeons to join expanding regional centers. Positions available in 2 locations. One in northwestern Wisconsin within 90 miles of Minneapolis and one, a group practice of 25 physicians, in northcentral Wisconsin approximately 1½ hours from Lake Superior. Communities offer exceptional recreational, cultural and educational opportunities. Compensation package with starting salary up to $149,100 combined with outstanding fringe benefit package totals in excess of $200,000. There is no buy-in or start-up expense. Send CV and references to David L. Draves, Director, Regional Development, 1000 North Oak Avenue, Marshfield, Wisconsin 54449 or call collect 715/387-5376.

PRACTICE OPPORTUNITY — Neurologist, orthopaedist, neurosurgeon, anesthesiologist or general practitioner interested in treating pain, needed as associate in well-established Midwest Neurosurgical Practice/Pain Center treating acute and chronic headache and pain. An opportunity to buy practice; drawing area of 300,000. 8,000 sq. ft. new clinic building just across from Marian Health Center. If interested please call 1-800/383-PAIN or 712/252-4386 or send resume to Headache and Pain Control Center, P.C., 700 Jennings Street, Sioux City, Iowa 51105.

McCRARY-ROST CLINIC, P.C. — Seeking a family physician to practice with David R. Archer, M.D. in the Gowrie, Iowa office. The group includes 9 family physicians, 1 general internist, 2 general surgeons with an environment to practice quality medicine, balanced with a high quality of life. New building, call every tenth night with adequate time off for family and other interests. For more information contact David R. Archer, M.D. at 515/352-3891 or Ed Maahs, Administrator at 800/262-6230.

FAMILY PHYSICIAN NEEDED — Academic department of family practice is recruiting Board Certified family physicians to join the full-time faculty of its well-established 24-resident program. Responsibilities include teaching, research and patient care. Residency training and previous experience in these areas is highly desirable, as well as obstetrics skills. Located in a midwestern/Big Ten medical, recreational and cultural center of excellence. Level and type of appointment commensurate with credentials of applicant. Send CV to Charles E. Driscoll, M.D., Professor and Head, Department of Family Practice, University of Iowa College of Medicine, 2149 Steindler Building, Iowa City, Iowa 52242. Women and minorities are encouraged to apply. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.

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PEDIATRICIAN, BE/BC — Director needed for pediatrics department at Broadlawns Medical Center, Des Moines. This county hospital has an active ER, acute care pediatrics and a family residency program. Good possibility of University of Iowa faculty appointment. Send CV to BMC, 18th and Hickman Road, Des Moines, Iowa 50314 or call 515/282-2319.

FAMILY PHYSICIAN — Busy, rewarding 2-doctor practice in central Virginia. Beautiful, friendly rural setting close to urban amenities. Virginia offers the ocean, mountains, Washington, D.C. and a great economy. For more information, call Al Southall, M.D., A.B.F.P., Louisa Family Practice, Louisa, Virginia at 703/967-2202.

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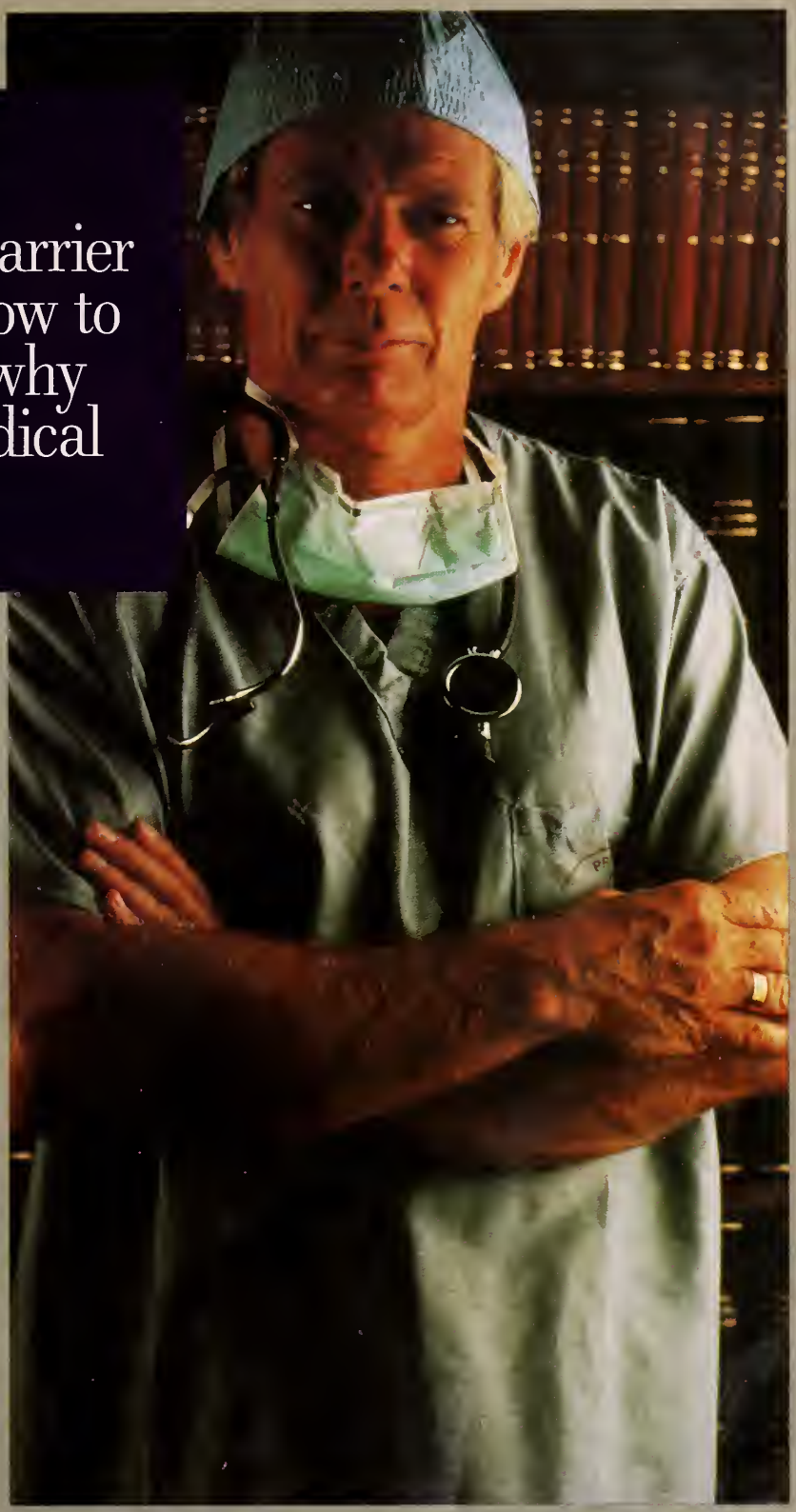
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THOUGH PHYSICIANS INCREASINGLY find themselves practicing in a morass of governmental regulations, ethical issues and socioeconomic considerations, they never lose sight of their major and continuing concern — the good health of Iowans.

As it does each year, this concern became apparent in the number of "public interest" policy proposals considered and supported by physicians representing their county societies at the annual IMS House of Delegates April 22-23 in Des Moines. Following is a laundry list of public health resolutions the IMS will act upon in the coming year. . . .

PROTECTING BABIES . . . The IMS will cooperate with the Iowa Department of Public Health and other groups to provide information on maternal and fetal health threats posed by cocaine and crack abuse.

HOMELESS . . . With local and state agencies and other organizations, the IMS will develop approaches to ascertain and address the health problems of the homeless.

SECOND HAND SMOKE . . . The IMS will work with the Iowa Hospital Association toward a measure to make all Iowa hospitals smoke free. The IMS will also support legislation to increase the tax on tobacco products and to require that all public buildings — including but not limited to restaurants — be made smoke free.

YOUNG ATHLETES . . . The IMS will investigate ways physicians and others can educate young athletes about steroid use and abuse. An IMS committee will also investigate the extent to which athletic insurance is available to Iowa's athletes and develop recommendations to encourage adequate coverage.

NURSING SHORTAGE . . . The IMS will encourage its member physicians to advocate fair base level nursing wages and support proposals which would increase nursing education subsidies which create incentives for nursing graduates to remain in Iowa. With appropriate nursing organizations, the IMS will develop proposals to improve working conditions for nurses and alleviate the nursing shortage.

CARING FOR CHILDREN . . . The IMS formally endorses the Blue Cross/Blue Shield Iowa Caring Program, which will provide primary and preventive services to Iowa children who meet age and financial eligibility.

ALCOHOL . . . The IMS will assist in development of adolescent alcohol impaired drivers intervention programs in Iowa communities. The IMS will also support increases in taxes on alcoholic beverages and the requirement that alcohol advertisements contain safety and warning messages.

TANNING BOOTHS . . . The IMS will initiate legislation to protect the public health from artificial ultraviolet light, including provisions requiring operators to post signs warning customers about the dangers of tanning devices.

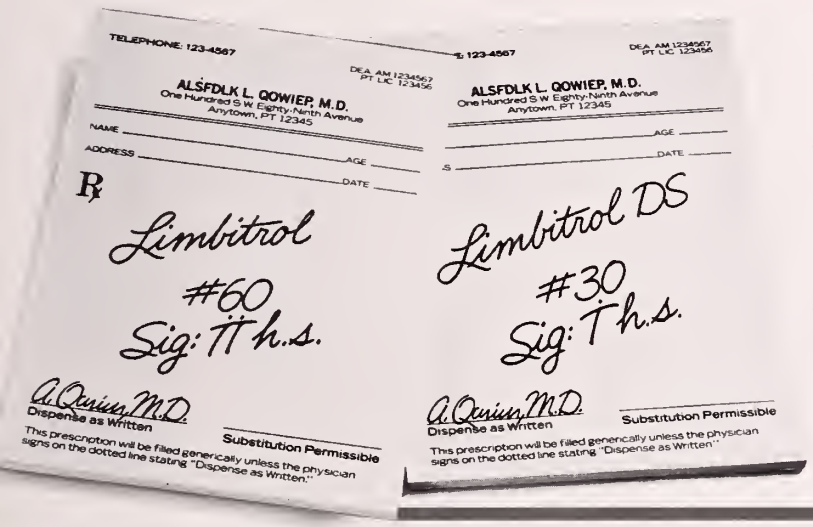
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Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) Ⓥ

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner JP, *et al: Psychopharmacology 61:*217-225, Mar 22, 1979.

Limbitrol®Ⓥ
Tranquilizer—Antidepressant
Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (*e.g.,* operating machinery, driving).

***Usage in Pregnancy:* Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: *Cardiovascular:* Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. *Psychiatric:* Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. *Neurologic:* Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. *Anticholinergic:* Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. *Endocrine:* Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. *Other:* Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

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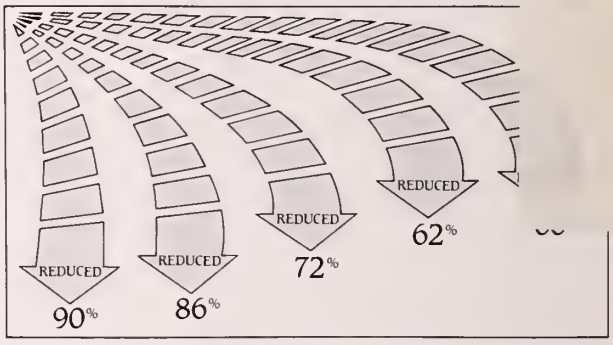
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- First-week reduction in somatic symptoms[1]

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*Patients often presented with more than one somatic symptom.

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IowaMedicine

August 1989

Journal of the Iowa Medical Society



BREAST CANCER

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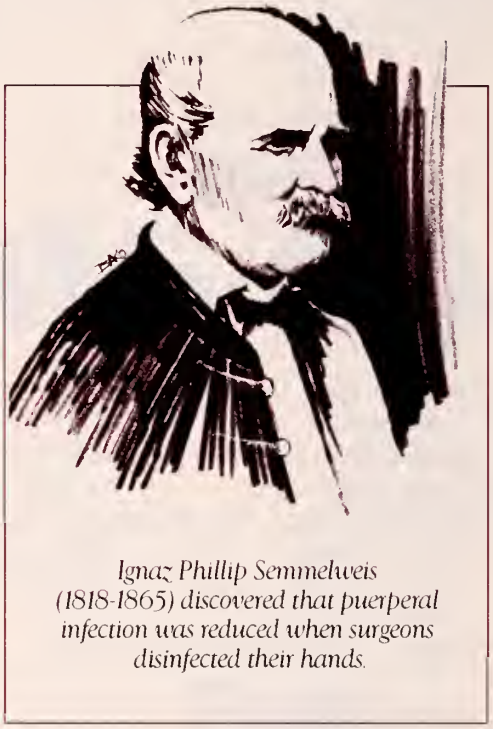
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Ignaz Phillip Semmelweis (1818-1865) discovered that puerperal infection was reduced when surgeons disinfected their hands.

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Ironically, the medical community washed its hands of Semmelweis, the physician who instructed his colleagues that disinfecting their hands with calcium chloride solution before surgery saved lives.

His findings, which he presented in an unacceptable fashion, were met with skepticism and rejection by the medical community. Semmelweis's sensitive nature crumbled under the ridicule and he eventually lost his mind.

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Otis Wolfe, M.D., a semi-retired Marshalltown ophthalmologist, took our lovely cover photograph of 2 herons at Mrazek Pond near Flamingo, Florida in Everglades National Park. Dr. Wolfe describes himself as a "serious amateur photographer with an emphasis on nature subjects." Dr. Wolfe has been practicing medicine for 51 years and photography for 15 years.

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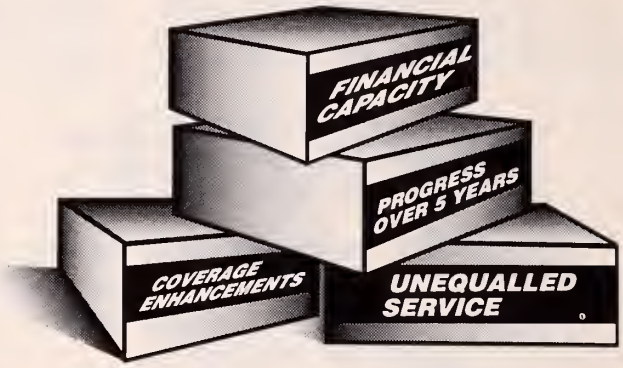
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Donald F. Rodawig, M.D.

President's Privilege



Thoughts on Expenditure Targets

IN JUNE, THE STARK Ways and Means Health Subcommittee, acting behind closed doors, approved a wide range of Medicare A and B cuts. The subcommittee agreed to sweeping changes that would implement the RBRVS fee schedule, national expenditure targets and new limits on balance billing as of October 1, 1991. Also approved were reductions in "over-priced" procedures effective April 1, 1990.

Expenditure targets must be exposed as a dangerous attempt to balance the budget at the expense of senior citizens and the disabled. They will prevent access to vital health care services by setting annual spending targets for vital health care services. This can only lead to health care rationing, which is totally unacceptable. Our patients deserve better.

American policy makers and patients should be alerted to the unworkable nature of expenditure targets by the Canadian experience. In Canada, there are waits for necessary consultations and the elderly are forced to delay necessary treatment — all because of expenditure targets.

To counteract this dangerous legislation, the AMA has designed a plan to assure access to all citizens, close gaps in health care coverage while maintaining benefits already available, reduce the administrative burden on patients, reduce paperwork in government and private insurance programs and ease the excessive cost of the liability system.

The AMA is proposing Medicaid reform which will provide uniform, adequate benefits to all poor instead of the 40% now receiving care. Health insurance must be expanded to include all employed Americans. A Medicare Commission must be created to develop recommendations to include continued health care access for senior citizens. Parameters of care must be established to identify the highest quality and most effective procedures.

Before any new plan is put into action, we have work to do. Along with the AMA, we must promote the advantages of the U.S. health care system to Congress and the public. We in the IMS and the AMA must initiate a proactive educational program to counter unwarranted criticism of the present system and address its inadequacies. Physicians have a responsibility to get back into the leadership role in reform of the health care system.

It we don't, someone else is waiting to do it for us.

Donald F Rodawig MD

Donald F. Rodawig, M.D.
President

Diagnosing Breast Cancer

DONALD C. YOUNG, M.D.
Des Moines, Iowa

The author discusses current guidelines for breast cancer detection.

THE AMERICAN CANCER SOCIETY predicts 140,900 new cases of breast cancer will be diagnosed among Americans in 1989. Nationally, 140,000 women and 900 men will develop the disease. If current survival rates apply, at least 35% with invasive tumors will die of the disease. In Iowa, 15,500 new cases will be diagnosed and 550 of those will die.

At the present time, there are no proved methods to reduce the incidence of breast cancer, which is increasing at a rate of 2% per year. Simply stated, 1 out of 10 American women will develop breast cancer during their lifetime. On the other hand, several convincing studies have shown earlier detection of breast cancer by screening mammography is one of the very few effective strategies.

Guidelines for Mammography

1. Diagnostic mammography at any age when clinical findings are suspicious for breast cancer.

2. Routine screening mammography is not indicated under the age of 35 years except in those with a family history of premenopausal breast cancer in the mother or a sister.

3. An initial baseline mammogram should be obtained during age 35-40:

a. A small but statistically significant number of early breast cancers will be found.

b. The baseline examination is available for comparison purposes in evaluating subsequent mammograms.

c. Some ongoing studies suggest the radiographic appearance of the breast parenchyma on mammography can be used as an additional risk indicator.

4. Subsequent mammography in the age group 40-49 is indicated every 1 to 2 years with the periodicity determined by prior mammographic findings and known risk factors.

5. For women over age 50, all experts agree that annual mammography is statistically justified and especially useful in this age group to diagnose preclinical breast cancer.

Detection Projects

In the mid 1970s, 280,000 self selected American women were examined annually for a 5-year period using mammography and physical examination as the primary screening techniques. The Breast Cancer Detection Demonstration Project was organized as a demonstration project not a research study; however, a unique data base was accumulated which permits many valuable investigations to be made.

Among the 1,153 minimal breast cancer victims identified through the screening program, 57% were detected by mammography alone compared with 6% detected through physical examination alone. Mammography

Dr. Young is a radiologist practicing in Des Moines.

alone was responsible for detecting a much higher proportion of invasive cancers over 1 cm in size than was physical examination alone (35% vs 9%).

A recent National Cancer Institute review clearly shows that screening mammography plus a breast examination by a health professional significantly reduce breast cancer deaths for women over and under age 50.

Mammography Equipment and Techniques

All mammography, whether using film or electrostatic (Xeroradiography or Xerg) techniques should be done on dedicated mammographic equipment capable of good compression, ideally photo timed and fitted with an X-ray tube appropriate to the imaging technique.

Today's mammographic equipment and techniques should enable us to make one of 4 diagnoses: normal, benign, suspicious or carcinoma. If a mammographically suspicious lesion is reported to be benign at biopsy, it should be followed with repeat mammography 6 months post biopsy.

Supplementary Diagnostic Techniques

In addition to mammography and physical examination, ultrasonography is of value in separating cystic from solid breast masses and to guide needle aspiration and/or biopsy procedures. Unfortunately, ultrasonography is unable to detect most telltale microcalcifications found on mammography which represent the only mammographic abnormality in approximately 1 of 5 minimal breast cancers.

Calcification

Soft tissue calcification can be generally classified as metastatic or dystrophic. Soft tissue calcification occurs when the calcium phosphate concentration product exceeds the solubility product. In this setting calcium phosphate salts precipitate with the threshold for precipitation decreasing as pH increases.

Metastatic calcification is that seen secondary to conditions which elevate serum calcium such as hyperparathyroidism, vitamin D intoxication, sarcoidosis, etc. Dystrophic calcification results in calcium salt precipitation in necrotic or hypoxic soft tissue which in tumors is partiallly due to tumor growth exceeding vascular supply. Calcifications typical of breast cancer exhibit several characteristic patterns and an experienced mammographer can usually separate malignant from benign configurations.

RISK FACTORS AND DEGREE OF RISK (Additive)

Characteristic	*Score*
1. Family hx	
a) 1° relative	1.5
mother and sister	12.9
sister < 40 unilateral	1.4
sister < 40 bilateral	9.5
sister + 40 bilateral	2.8
b) 2° relative (aunts and cousins)	0.8
2. Prior Bx showing	
a) proliferative changes	0.5
b) atypical hyperplasia	3.0
c) atypical hyperplasia and Ca++	5.5
3. Later 1st birth (30 years +)	0.8
4. Low parity (1-2)	0.8
5. Late menopause (50+)	0.3
6. Early menarche (<11)	0.5
7. Obesity	0.5
8. Alcohol (moderate consumption)	0.6
9. Education (12+ years)	0.7

Score	*Risk Category*
0-2.0	slight increase
2.1-5.4	moderate increase
5.5-9.9	high increase
10.0+	very high increase

Screening Mammography

Properly performed and interpreted mammography can find the earliest and most curable breast cancers. Facts, however, indicate only 15% of women over 50 have a mammogram every year though 75% are aware that mammography exists.

Slightly more than 11% of American physicians follow the guidelines in advising asymptomatic women. Most frequently mentioned obstacles are fear of radiation, unnecessary biopsies, over-diagnosis and cost, resulting in physicians and patients developing attitudinal barriers that are not reflections of reality.

Transillumination, CT scanning and magnetic resonance imaging have no role in a clinical setting except on an experimental basis.

Breast Cancer: One Woman's Perspective

JEANNINE SCHULZE
Des Moines, Iowa

The author provides a first person perspective on breast cancer and mastectomy, offering valuable advice to physicians treating women with this disease.

WHEN YOU ARE TOLD you have cancer, it changes your whole life. It's difficult to think of a life-threatening illness as a prelude to a fuller life; but when the pain and fear subside, your experience will, if you let it, offer an opportunity to decide what's important to you and make the rest of your life productive and happy.

Someone once told me cancer should be a 4-letter word. I wholeheartedly agree. It is one of the most frightening words in our language and certainly not one we ever expect to hear regarding ourselves.

As a doctor's wife I considered myself well informed concerning preventive medical measures. I began having regular mammograms when my only sister experienced breast cancer and a mastectomy several years ago. I'll never forget the first time she showed me her "missing breast." She was so brave. She was determined to proceed with reconstruction and return to normalcy as soon as possible. I admired her very much. Little did I realize how much this experience would help me in the months to come.

I was visiting my mother in California when I discovered a lump in my breast. Rationalization immediately set up household in my psyche to assure me it was a cyst. I called home and my husband, a physician, wanted me to jump on the first plane to Des Moines. Since I had just gotten there, we compromised and my sister accompanied me to get a mammogram. I was advised to have a biopsy. I completed my week's vacation and tried to set my fears on the back burner.

My husband Bob, had suffered a heart attack 7 months earlier and returned to his dermatology practice after a successful recovery, but our family was still reeling. I chose to have the biopsy as an out-patient and then proceed with whatever treatment was necessary. Awaiting the results is a period of apprehension that is hard to describe. Good health, it is said, sits like a crown on a well man's head, but only a sick man can see it.

The diagnosis came — infiltrating ductal carcinoma. I hate that word, infiltrating; it sounds even worse than cancer. When I first found the lump I feared I would lose my breast. Now I was afraid it would be too late to take it. Bob and I visited the surgeon and discussed my treatment and prognosis. He told us, "If this were my wife I would suggest a mastectomy and chemotherapy." That personal note was convincing.

Mrs. Schulze is past president of the IMS Auxiliary.

Bob had told me he was ambivalent about chemotherapy but our thinking changed after hearing the statistics in favor of the treatment as a guard against recurrence. The day was Friday so we set the surgery for Monday.

I had great confidence in my surgeon and was not afraid of the operation itself. He had prepared us well on what to expect medically. Now it was up to us to prepare ourselves, each other and our children. I asked our youngest son Greg, who was 20 and a student at the University of Iowa when this happened last year, to put his feelings in writing:

> Cancer afflicts not only the patient but the family as well. This is especially true for the children, who have a right to know the truth. Being aware of the mental and physical ramifications of the disease develops knowledge. Without this crucial learning, loved ones are unable to fully give their support. If I had not been fettered by fear and ignorance, I might have been better able to focus on my mother's needs. I feel it would be extremely helpful if doctors would take the necessary time to talk to the family.

It's very difficult to explain to a male what loss of a breast means. There is nothing in the male anatomy that is identically analogous. A woman feels better when she is happy about her outward appearance. Femininity is associated with our concept of our figure. I was told about the possibility for reconstruction of the lost breast, but it didn't lessen the loss.

This is a time for the doctor to convey empathy for the patient as he would if she were experiencing any other type of grief. It's a time for the good old "hands on" medicine. The old attitude used to be that patients should be grateful just to survive the cancer. Today we know psychological and social factors make a difference. A pat on the shoulder can convey the team message — "we're in this together. Depend on me to do my part and I'll support you in yours any way I can." Fortunately, I had this caring relationship with my doctors.

I was also blessed with the sustaining comfort of my husband. We were both secure in the knowledge that these body changes would not detract from our sense of caring nor sharing of intimacy. No matter how well I tried to prepare myself for the surgery, fear and apprehension lived with me. At my request my daughter accompanied me to the hospital. I took comfort in her feminine understanding. While we were waiting for my call to the operating room, I would have found it soothing to visit with my anesthesiologist about that aspect of the surgery. Following surgery comes the waiting period for the results of the lymph node exam. Two days later my doctor told me the good news — no lymph node involvement. I felt his joy as my family and I cried tears of happiness and relief.

'This is a time for the doctor to convey empathy for the patient as he would if she were experiencing any other type of grief. It's a time for the good old "hands on" medicine.'

The following week I began the ominous chemotherapy. I used the "look good, feel good" concept of self-talk therapy. I stayed as active as possible and worked at keeping up my appearance. When I lost all my hair, thank God I didn't lose my sense of humor. I was a brunette. Okay, so I had a few gray roots. My hair came back into what I am told is a beautiful silver color.

The oncologist plays a primary role in establishing positive life-affirming attitudes. How wonderful that my oncologist maintains his unique sense of humor in his particular specialty. It's infectious. Even when suffering some of the unpleasant effects of the treatment, thanks to his encouragement I was able to keep my psychological equilibrium. He plays a vital role during the treatment and recuperative period. Once you have cancer, every little pain is a possible recurrence. The oncologist is the one you depend upon to allay your fears.

People told me "You should be thankful for your life." Believe me, I am, but that fact

(Continued next page)

doesn't lessen the loss I feel over losing part of my anatomy, learning to live with a change in my femininity. Bob taught me to tell myself, "You have a body but you are not your body."

Volunteerism replenishes my soul. That's why the American Cancer Society was a God-send to me. The ACS Reach to Recovery volunteer visited me in the hospital. The program is designed to help women meet the physcial, emotional and cosmetic needs of their disease and/or its treatment. It also provides information and support to loved ones and friends. She brought me a kit containing a temporary breast form for which I was truly grateful. I have since become a Reach to Recovery volunteer and also donate time to the ACS Speakers' Bureau giving talks on breast cancer from the patient's viewpoint and emphasizing the importance of preventive medical care.

The ACS also has excellent programs called "I Can Cope" offered through hospitals and other community facilities. The new CanSurmount program is a one-to-one support system offered both patient to patient and family member to family member. They also have a loan closet where patients can obtain wigs, among other items. Volunteering for the American Cancer Society has added a unique significance, purpose and quality to my life.

My surgeon's group, recognizing the special needs of cancer patients, established a support/information group which is most educational and helpful. This system can function effectively on a large or small scale. The need is there.

Gibran says in *The Prophet* "Your pain is the breaking of the shell that encloses your understanding. Much of your pain is self-chosen. It is the bitter potion by which the physician within you heals your sick self. Therefore trust the physician and drink his remedy in silence and tranquility." Joy and sorrow are one.

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Barbara Meggison

Questions and Answers



The Best Kind of Support

The author, co-founder and president of the 'After Breast Cancer' support group, discusses ABC's purpose and how physicians can best help breast cancer patients.

What is ABC? How can breast cancer patients benefit from this group?

ABC, After Breast Cancer, is a support group for women who have had breast cancer. ABC was started in 1988 because 2 doctors felt their efforts to help breast cancer patients were inadequate. Dr. Louis Rodgers, surgeon, and Dr. John Walker, radiologist invited several women who had had breast cancer to discuss starting a support group. After much discussion it was decided the women would run ABC autonomously.

We are a non-profit corporation open to any woman in Iowa who has had breast cancer. Our primary function is to provide mental and emotional support. Iowa Methodist Medical Center graciously agreed to provide meeting space at no cost. Dr. Rodgers and Dr. Walker have made funds available so we do not have to charge membership fees.

Do most women seek out groups such as ABC or do they have to be persuaded to participate?

In the beginning our membership totaled 15; by June, 1989 our membership directory listed approximately 50 members. Women with breast cancer are learning about ABC through their doctor, nurse, a friend or family member or newspaper notice. Our publicity chair sends our cards to doctors' offices, medical facilities and hospitals, together with a letter explaining ABC and our functions. Members phone numbers are made available on these cards.

The phone calls I receive are usually due to a woman's doctor or nurse having given her a card with my name and phone number on it. Participation in ABC is a personal choice depending on a woman's emotional needs and how ready she is to reach out for help.

Do spouses/friends attend? Does ABC have something to offer them?

Women are invited to bring anyone they are comfortable with. A husband, family member or friend of any woman who has had breast cancer is always welcome. However, our meetings are set up primarily to benefit the woman and our speakers address her needs.

Some men who have attended in a support capacity have indicated they would welcome an opportunity to meet with other interested male supporters and form their own group. Since their needs are quite different, it was decided we would not incorporate the 2 support systems in one.

Although we do not have any male members of ABC, we do recognize that breast cancer is not an exclusive disease of women. I

(Continued next page)

have received only one phone call from a man who had questions about changes in his breasts. I urged him to seek professional advice. Our group welcomes anyone who has breast cancer, male or female.

What is the hardest adjustment for breast cancer patients?

The hardest adjustment depends on the woman. There are as many answers to this question as there are women who have breast cancer. Each of us have problems adjusting our self-image; how well we adjust is an individual matter.

I asked our members to help me with this question. Their answers were feeling "out of control of my life," difficulty coping with hair loss during chemo, not feeling "whole," not enough time to consider options, feeling you weren't given all options, "no one to talk to who had already been where I had to go," family and friends would not talk about it or say the word cancer and fear.

Almost all of us go through some form of grieving but how long this takes and how we come out of it differs from woman to woman. The concensus of our members is the most important aid to coping is a loving, supportive family and friends. After the shock of discovery and surgery is behind us, we can reach out to other women facing the same things. Each of us is at a different stage of our recovery and a new member will almost always find another woman who is in her stage or close to it.

How could physicians do a better job of helping breast cancer patients?

Physicians can help by understanding that, although they provide the best medical care, they are unable to provide the emotional support another woman can. I believe ABC can supply the help women who have breast cancer need. Support groups are designed for just that . . . support. No matter how caring and knowledgeable a physician or loving and supportive a family member or friend, they cannot provide the support found in ABC. If you would like more information, please call me at 515/270-0999, Urbandale.

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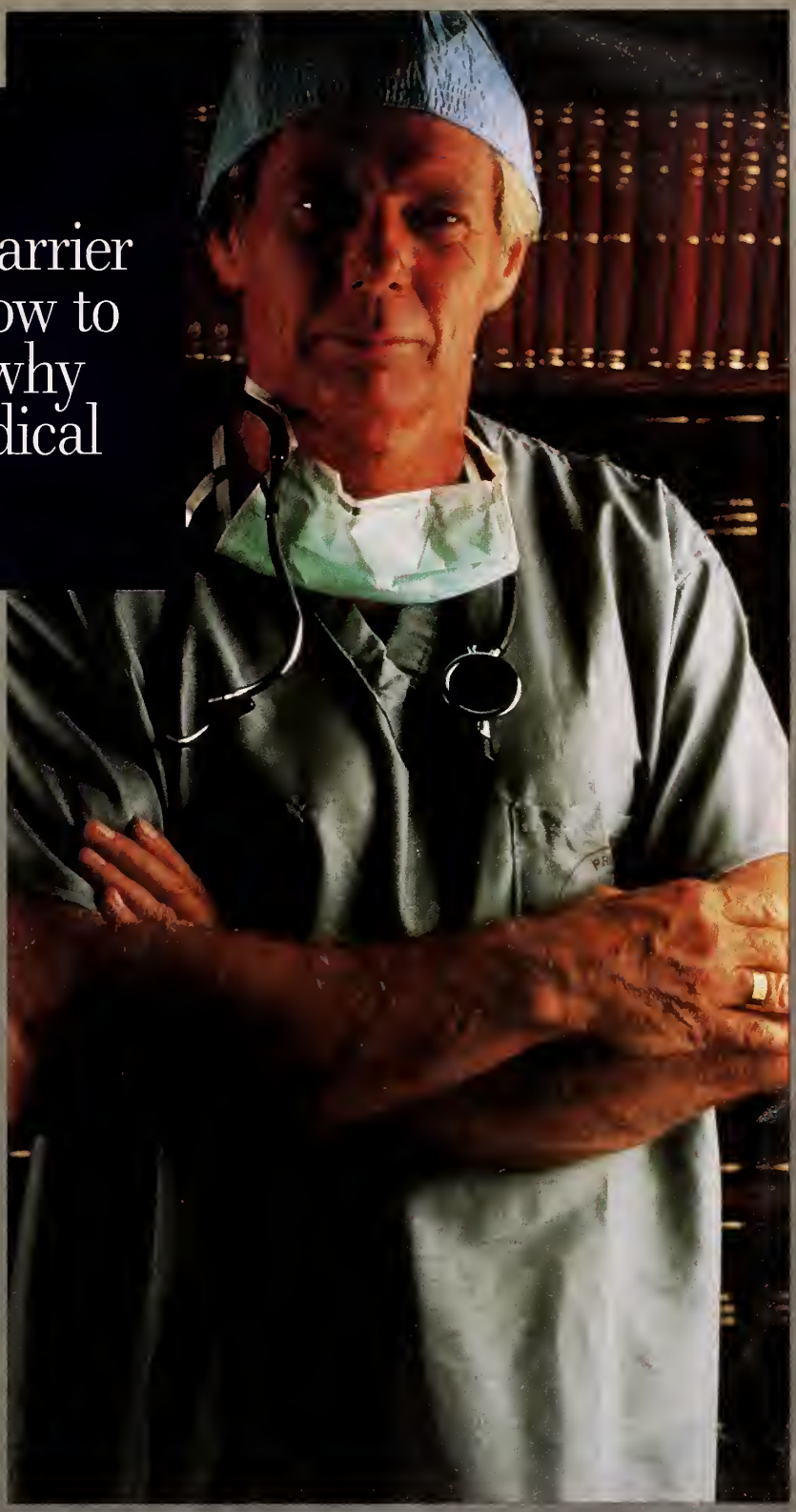
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Brief Summary

Consult the package literature for complete information.

Indications and Usage: Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg h.s. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication: Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H_2-receptor antagonists.

Precautions: *General* — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported, it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H_2-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H_2-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H_2-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage. Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the *Physicians' Desk Reference (PDR)*. In managing overdosage, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP [013089]

Additional information available to the profession on request.

Historical Vignette

Surgical Management of Breast Tumors

Editor's Note: This historical vignette was submitted to IOWA MEDICINE *by Merle J. Brown, M.D. shortly before his death in 1987. Dr. Brown was a longtime general surgeon in Davenport.*

MY FIRST BREAST CASE occurred in 1940 and resulted in breast amputation for carcinoma. Subsequently, I treated 329 patients for breast disease of various types during my 51 years of surgery.

Since 1940, I have done 242 radical breast resections on females with carcinoma. During this time, 2 females had breast removals of cystosarcomas. Four males had their breasts removed for tumors; one of the tumors was malignant.

Thirteen females had fibroadenomas removed from their breasts.

Four cases of lumpectomy were done with followup x-ray therapy. These tumors were all malignant and axillary nodes were resected. I have not been too happy with lumpectomy procedures.

Some females have had simple mastectomies because of multiple breast biopsies for adenoma and cysts. These women requested that their breasts be removed before cancer could occur.

The remainder of female breast surgeries were removal of cysts and adenomas with frozen sections. Tissues removed from breasts were sent to pathologists to rule out malignancy.

Summary: A total of 329 breast patients were treated surgically since 1940. Of these, 242 females had radical mastectomies; 4 had lumpectomies with x-ray therapy for malignancy; 79 females had benign tumors; 4 males had breast tumors, with one malignancy.

Anti-HIV For Rape Victims

Physicians and other health care workers who treat female rape victims should reevaluate and update their treatment protocols to include early administration of nonoxynol 9, the spermicide ingredient shown to inactivate HIV, according to the *Journal of the American Medical Association.*

Routine use of a topical anti-HIV agent such as nonoxynol 9 as soon as possible after the assault can provide a measure of HIV prophylaxis without interfering with evidence-gathering.

Birth Rate Climbs

More babies were born in 1988 than during any year since 1964, according to a provisional report from the National Center for Health Statistics. NCHS reports that 3,913,000 babies were born in the U.S. last year.

The marriage rate was the lowest since 1967 and the divorce rate the lowest since 1975.

Educate Patients About Fraud

Physicians must play a more active role in educating patients about health fraud, which costs the nation nearly $10 billion per year, says an article in the monthly magazine of the American College of Physicians.

The elderly and AIDS patients are particularly vulnerable to questionable and dangerous treatments. MDs can help expose quackery by asking their patients about drugs, devices, diet therapy or other therapeutic regimens they use and investigating those products and services.

Physicians should also explain to patients that efficacy and safety are crucial to all tests, prevention techniques, therapies and remedies and should welcome questions from patients on all products and services.

(Continued next page)

The Pill and Breast Cancer

According to a new study in the *Journal of the American College of Obstetricians and Gynecologists*, long term use of oral contraceptives does not increase risk of breast cancer for women with a family history of the disease.

A personal history of breast cancer is a contraindication for pill use, but family history is not.

Medicaid Funds

Half of the 50 states are projected to receive an increased share of federal funds for Medicaid and other entitlement programs in fiscal 1991 over fiscal 1990, reports the National Governors' Association.

Thirteen states are expected to receive smaller shares, with 12 receiving the same amount.

Make A Wish Foundation

The "Make a Wish Foundation," a national organization which grants wishes for children with very limited life expectancies due to illness, now has 4 chapters in Iowa and hopes to make itself known to Iowa physicians who may refer children to the program.

Make A Wish, established in Phoenix in 1980, is now the nation's largest wish granting charity and has chapters across the U.S. It is supported by donations from many sources primarily within the communities where chapters are located.

For children to receive their "wish," rather stringent requirements for eligibility and supervision must be met to ensure the experience is beneficial to the child. A physician certification that the child is eligible for the program is mandatory, and many children are referred by their local physicians.

Addresses and phone numbers for Make A Wish chapters in Iowa are:

Make A Wish Foundation of S.E. Iowa
425 2nd St., S.E., Suite 610
Cedar Rapids, Iowa 52401, 319/366-1218

Make A Wish Foundation of N.W. Iowa
916 Grandview
Sioux City, Iowa 51101, 712/255-5139

Make A Wish Foundation of S.W. Iowa
c/o John Stiers
316 25th St.
West Des Moines, Iowa 50315, 515/244-9343

Make A Wish Foundation of N.E. Iowa
c/o Ed Deuhr
R.R. 2
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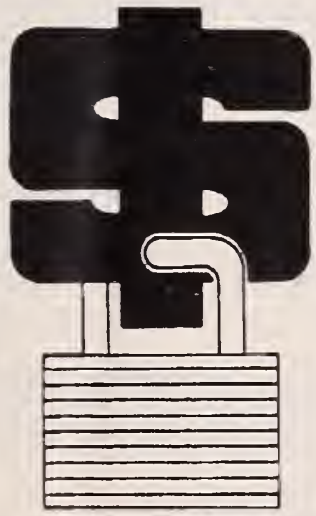
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LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

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Breast Reconstruction After Mastectomy

JOHN GANSKE, M.D.
Des Moines, Iowa

The author discusses 137 breast reconstructions, focusing on patient selection, possible complications and patient satisfaction.

BREAST RECONSTRUCTION after mastectomy is done with increasing frequency. Techniques are better and safer, there are more surgeons trained in these procedures, patients are better informed of treatment options, more patients wish to minimize deformity and the procedure is covered by insurance.

This report covers the author's first 137 breast reconstructions done from September, 1984 through September, 1988. Timing of reconstruction, patient selection, opposite breast risk, possible complications and patient satisfaction are discussed.

Patients and Methods

Sixty Stage I and II breast cancer female patients age 26-69 (average age 48) underwent breast reconstruction after mastectomy for cancer. Infiltrating ductal carcinoma was the most common tissue pathology. In this group of 60 patients, the types of tumor were as follows: infiltrating ductal carcinoma — 45 (75%); lobular carcinoma — 10 (17%); atypical carcinoma — 2 (3%); Paget's carcinoma — 1 (2%); and multifocal intraductal and infiltrating ductal carcinoma — 2 (3%). An additional 15 patients with premalignant breast disease underwent bilateral prophylactic mastectomy, simple or subcutaneous.

Immediate reconstruction and delayed reconstruction were done with equal frequency and single-stage submuscular reconstruction almost as often as 2-stage tissue expansion reconstruction (Table 1). In the 60 cancer patients, the opposite breast was treated in a variety of ways, the most common being simple mastectomy and immediate reconstruction. No surgery was done on 7 patients, s/p bilateral mastectomies on 9, subcutaneous mastectomy on 2, simple mastectomy on 37, modified radical mastectomy on 1, breast reduction on 3 and mastopexy on 1. The pathologic findings in the opposite breast are listed in Table 2.

The pathologic findings in the 15 additional patients with premalignant breast disease who underwent bilateral prophylactic mastectomy were as follows: marked focal atypical ductal proliferation and lobular hyperplasia, moderate intraductal hyperplasia, atypical ductal epithelium, apocrine metaplasia and severe atypia, intraductal hyperplasia,

Dr. Ganske practices plastic surgery and general surgery in Des Moines.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR AUGUST 1989

TABLE 1

TYPE OF BREAST RECONSTRUCTION

GEL prosthesis under local muscle flaps:	
Immediate reconstruction	41
Delayed reconstruction	27
Tissue expander under local muscle flaps:	
Immediate reconstruction	36
Delayed reconstruction	31
Rectus abdominus myocutaneous flap	1
Latissimus dorsi myocutaneous flap	1
Total reconstructed breasts	137

TABLE 2

FINDING IN OPPOSITE BREAST

Fibrocystic disease without atypia	5
Multiple fibroadenomas and fibrocystic	1
Epithelial hyperplasia	3
Duct ectasia and hyperplasia	4
Marked atypical epithelial hyperplasia	3
Stromal fibrosis	1
Dense fibrosis with calcifications	1
Apocrine metaplasia	3
Sclerosing adenosis and ductal hyperplasia	2
Atypical sclerosing adenosis	3
Marked focal epithelial hyperplasia	12
Atypical lobular hyperplasia	1
Lobular carcinoma	1

extensive fibrosis, apocrine metaplasia and extensive intraductal papillomatosis, fibrocystic disease, intraductal papillary hyperplasia with microcalcifications, extensive intraductal papillary hyperplasia and metaplasia, atypical intraductal hyperplasia, apocrine metaplasia and fibrocystic changes, carcinoma in situ and severe atypia, infiltrating ductal carcinoma and apocrine metaplasia, infiltrating ductal carcinoma and extensive fibrocystic changes.

The patients had an average of 1.81 reconstructive procedures (including nipple reconstruction). They were an average of 3.2 years post cancer treatment and have been followed after reconstruction for an average of 2 years (2 months to 4 years). Two patients have developed metastatic disease since reconstruction; 5 patients have required capsulotomy or implant repositioning for an incidence of 7%.

Complications were rare; fat necrosis led to removal of one implant and there was one hematoma. There were no infections and no patients required blood transfusion. Ninety-five percent of the patients had complication free reconstruction. Seventy nipple-areolar reconstructions have been free of complications except for an epidermal inclusion cyst in the skin graft donor site of one patient and the partial loss of one nipple flap.

TABLE 3

PATIENT SATISFACTION WITH RESULTS OF BREAST RECONSTRUCTION

*Grade**	*No. Patients*
0 (failure)	0
5 or less	4 (7%)
5 to 8	10 (18%)
9 to 10 (perfect)	41 (75%)
Average score	8.7

*On a scale of 1 (not happy at all) to 10 (very happy), as rated by patients in anonymous postoperative questionnaire.

Questionnaires were mailed to all 75 patients and 55 anonymous replies were received. On a scale 1 ("not happy at all") to 10 ("very happy"), the average patient satisfaction score was 8.7 (Table 3). The average patient satisfaction score for nipple reconstruction was 8.2. Eighty-five percent of patients thought the size of their reconstructed breasts was "just right." The average score for prosthesis softness was 8.8 (1 = rock hard to 10 = totally soft).

Ninety-eight percent of patients said they would repeat reconstruction and would recommend reconstruction to a friend. Photographs 1 to 5 show typical preoperative defects and postoperative results for a post mastectomy patient and a patient with high risk for developing breast cancer. Photograph 6 shows a close-up view of a reconstructed nipple.

Discussion

Breast reconstruction is limited to patients with good prognosis (Stage I and II). Age is not a contraindication if the patient is healthy and strongly desires reconstruction. If there is a strong likelihood the patient will need adjuvant treatment, reconstruction is usually delayed until chemotherapy is completed and the immune system has normalized.

Immediate reconstruction by placement of either a silicone gel prosthesis or a tissue expander under local muscle flaps can be safely done in the highly motivated patient. There was no difference in morbidity between the

immediate versus the delayed reconstructive groups in this series. If there is any question of skin flap viability at the time of mastectomy, the reconstruction should either be delayed or a tissue expander placed.

Prophylactic mastectomies and immediate reconstructions are done on high risk patients. The indications for prophylactic mastectomy are lobular carcinoma in situ, atypical biopsy pathology, intraductal carcinoma, strong family history of breast cancer and contralateral mastectomy in good prognosis patients with cancer. If selection criteria for prophylactic mastectomy are stringent, the return can be high. In this series of patients, 20% (3 of 15) were found to have previously undetected breast cancer in their specimens. Axillary dissections were done on these patients and no nodes were positive.

A woman who has had cancer in one breast has a 4 to 5 times increased risk of developing breast cancer in the contralateral breast. The risk is higher if there is also a family history of breast cancer. The risk of developing breast cancer in the opposite breast approaches 40% in the next 10 years for patients with certain types of breast cancer such as lobular carcinoma. Thirteen percent (8 of 60) of the cancer group patients presented for breast reconstruction as bilateral mastectomy patients.

Some patients chose unilateral reconstruction and close follow-up of the other breast by frequent physical examination and mammography. Older patients with large and pendulous breasts occasionally desire an uplift or reduction procedure on the contralateral breast in order to relieve discomfort symptoms.

Reducing Further Risk

Most younger patients in this series, when informed of the increased risk of contralateral breast cancer, chose simple or subcutaneous mastectomies on the contralateral breast in conjunction with the reconstruction on the cancer side. The risk of subsequent contralateral breast cancer is significantly reduced and the reconstructive results are usually more symmetrical.

The incidence of revisional surgery (repositioning, capsulotomy or capsulorrhaphy) is low in this group of patients as compared

(Continued next page)



Photo 1. Post-mastectomy — 40-year-old woman after left mastectomy for cancer.





Photos 2 and 3. Post-reconstruction — After bilateral breast and nipple reconstruction.



Photo 4. Breast Disease — 38-year-old-woman with premalignant breast disease.



Photo 5. Bilateral Mastectomies — Post bilateral subcutaneous mastectomies and reconstructions.



Photo 6. Nipple Reconstruction — Close-up of nipple-areolar reconstruction.

to other series. (Ganske reports 7%; Noone, Murphy, Spear, et al 12%; Gibney 15%; and McCraw, Horton, Grossman, et al 29%). There are 2 reasons why capsule contracture problems ("hardening of the implants") are low in this series. First, all prostheses are completely covered by muscle flaps. This usually involves covering the prostheses by the pectoralis, serratus and superior portion of the rectus abdominus muscles. Occasionally, more complicated muscle flaps such as the latissimus dorsi or pedicled rectus abdominus are necessary.

Secondly, whenever the chest muscles or skin look tight, tissue expansion is used. The tissue expanders can slowly stretch roomy submuscular pockets into which permanent gel prostheses can be subsequently placed. Usually, nipple-areolar reconstruction is done at the time of the second operation.

Finally, patient satisfaction is gratifying with present methods of breast reconstruction. Ninety-eight percent of the survey respondents thought the results were worth the additional anesthesia, discomfort, time off work and expense. Further, nearly all (98%) would recommend breast reconstruction to their friends.

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The Editor Comments

Breast Cancer

There is a tremendous literature on cancer, but what we know for sure about it can be printed on a calling card.

— August Bier (1861-1949)

THE CAUSE OF BREAST CANCER is not known. In the United States about one of 10 women develop breast cancer, second to lung cancer as the leading cause of cancer death in women. Many risk factors are known, but the mechanisms remain a mystery. Yet, most women who develop breast cancer do not have a family history of it or other high risk factors. Consequently, education of women and evaluation by physicians are mandatory if the disease is to be discovered early and managed properly.

Our knowledge of the management of cancer is ever changing. Controversy continues about surgical management and adjunctive therapy. For years radical mastectomy was the standard. This involved removal of the entire breast, the underlying chest wall muscles and the axillary lymph nodes. Today modified mastectomy, leaving the chest wall muscles intact, is more common. Coming into vogue has been the "lumpectomy," removal of the tumor mass with a margin of normal breast tissue. Breast irradiation follows the lumpectomy.

One-third or more women are likely to develop metastases of the cancer of their breast. Drug regimens help improve quality of life for patients with recurring disease, but most die from progressive metastases. The 2 major forms of adjuvant systemic therapy are intravenous agents and oral antiestrogen hormonal therapy. Cytotoxic therapy interferes with the metabolism and growth of the rapidly dividing cancer cells. These agents, however, also act upon normal cells resulting in undesirable side effects.

Antiestrogens inhibit growth of malignant breast cells by estrogen stimulation. Estrogens apparently bind with estrogen receptor proteins in the cell nucleus. Synthesis of DNA is triggered leading to cell division and production of proteins crucial to cell metabolism. Antiestrogen reacts with the receptor protein to inhibit growth and metabolism of cancer cells. Studies have shown the effectiveness of antiestrogens for tumors containing higher levels of estrogen receptor proteins.

The use of cytotoxic agents is a complex subject. It appears the combination of several cytotoxics has more effect than use of one agent only. The most widely used combination is cyclophosphamide, methotrexate and 5-fluorouracil. Studies have shown the use of combination cytotoxics reduces the risk of death by about 25% in women under age 50, but has no significant effect on women over age 50. In the group over age 50 adjuvant use of antiestrogens reduces risk of death by about 20%.

There is much to be learned about management of breast cancer. The loss of 42,300 American women from this dread disease is unacceptable. The 140,000 women in the U.S. expected to develop breast cancer in 1989 will be victims of a scourge of which too little is known. Education of women regarding self-examination must be emphasized. Effective examination by physicians is mandatory. Effective management comes with early detection. New modalities of the care of advanced cases, with a decrease in morbidity and mortality, are a challenge to the medical researchers of today and tomorrow.—*M.E.A.*

Richard M. Caplan, M.D.

CME Notebook



Don't Trust All You Read

THIS TITLE IS CERTAINLY an old cliché, but you probably guess it would NOT apply to what you read here. Wouldn't you? But it's true — I led you astray. My plea of innocence can apply only to my intention. My undoing comes from an old friend, Dr. Larry Porter of Des Moines, who wrote claiming I had to be wrong. Here's the story.

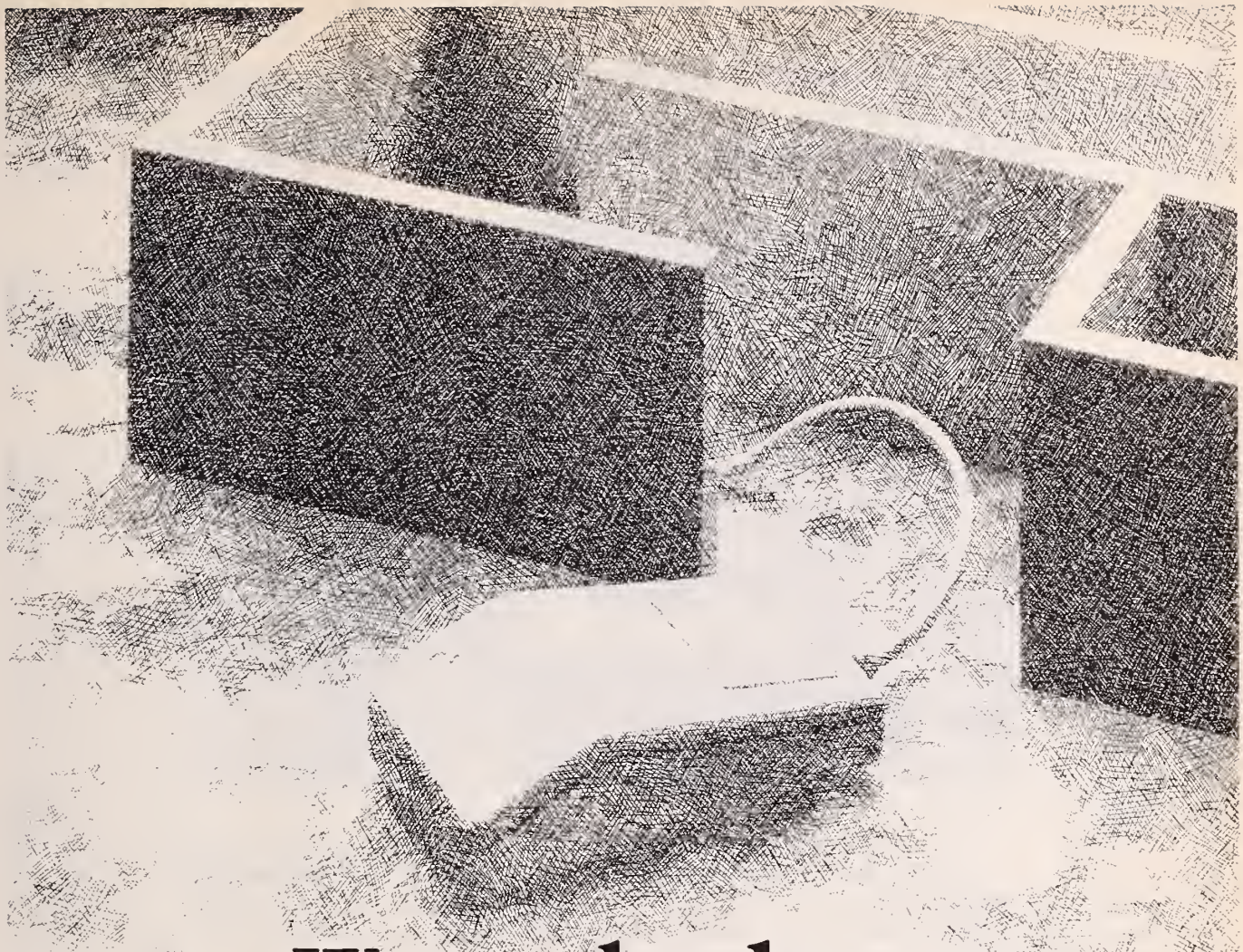
Last October I wrote about an old "magic trick" I learned as a child. The "trick" was to pour a glass full of water into a glass full of straight pins and have nothing spill over. Now, I had never actually attempted the maneuver, but somehow remembered the description and assumed its truth, even though I recall thinking, "How could such a thing really be?" When Larry challenged me, saying "Whatever happened to Archimedes' Law?" I decided, decades later, to test the question.

What I found, as Larry and even I had brow-wrinklingly suspected, was that if the water container was really full, that is, its surface slightly bulging above the rim from surface tension, then indeed the volume of the metal in the pins displaced enough water to cause a spill. (Archimedes had measured that volume; I actually didn't — I was enough satisfied just to learn there had to be spillage.) In order for the trick to "work," one would have to be sure the glass was slightly less than truly full and hope that inattention of the viewer, plus the meniscus effect of surface tension, would seem to verify the outrageous claim.

I credit Larry with calling my bluff, but I suspect (without checking) he did it using theory and a belief in Archimedes, and not from testing the hypothesis. All this reminds me of a story often repeated in the history of medicine or science. At the height of the "Age of Reason," the young Edward Jenner, later to become famous for developing a smallpox vaccine from lesions of cowpox, asked his teacher, the great anatomist-surgeon, John Hunter, what would be the answer to a particular scientific question. Hunter's response has become famous: "Why think? Why not try the experiment?" This anecdote enjoys retelling because it epitomizes the spirit of scientific inquiry and the satisfying of the quest by gathering empirical evidence rather than speculating.

What has all this to do with continuing medical education? Seldom can practitioners actually perform or repeat a medical investigation to establish its truth *a la* John Hunter. But if physicians are to remain current in the maelstrom of new and conflicting information, they must retain a healthy skepticism about what they read and hear, and develop or fine-tune their skills of criticism to judge what is more likely true about what is new. A journal club at a community hospital or among physicians who practice together would be one time-honored and excellent way to hone the skills of judgment. I'm sanguine the Federal Trade Commission will never consider such discussion to be collusion or restraint of trade. Thanks, Larry.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.



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Employee Handbooks

EVERYWHERE YOU TURN SOME unhappy patient is suing a medical person or facility. Physicians and administrators have their hands full in delivering proper care and achieving satisfactory doctor/patient relationships.

Compounding these challenges is the responsibility of the employment relationship, whether it is a 2-person office or a major medical facility. Informal arrangements typically form the basis for the employment relationships in smaller offices. However, as offices and facilities grow, doctors and administrators find that previous methods of dealing with employees do not work as well, especially in the area of equity of treatment.

There is also external scrutiny imposed upon employers vis-a-vis laws, regulations and executive orders and those agencies and courts which enforce them. This adds a new dimension and forces actions which probably would not otherwise have been taken. There is a choice of whether or not to comply, but there are risks associated with non-compliance.

One way to address this employment relationship is to provide some form of communication to employees so that they may have a better understanding of the relationship. This communication is often provided in the form of an employee handbook.

Employee handbooks have become very controversial. The reason is litigation resulting from a "breach of contract" when an employer fails to follow the terms outlined in the handbook. Verdicts against employers can cost substantial sums of money, to defend and settle. The Iowa Supreme Court recently ruled that written personnel policies in an employee handbook constituted a contract of employment. In Cannon v. National By-Products, Inc., 422 N.W., 2d 638 (IA 1988), the handbook stated employees would not be discharged without "just and sufficient cause," and the court ruled that it was a "specific written guarantee" that discharge could only take place "for cause." The court upheld a jury award of $47,500 for an employee who was terminated for a reason that was not for "just cause."

Some employers say they will do away with handbooks so they can stay out of trouble. The problem is that regardless of whether there are written policies, employment practices are being carried out.

Without guidelines, employment practices could be carried out inconsistently, thereby increasing the chances of unfair or discriminatory action. An example is a terminated Michigan employee who was awarded $217,774 from his employer for being discharged without "just cause" in breach of a verbal contract. The contract was a promise from the employee's supervisor that he would have a job as long as his performance was "satisfactory." Even though there was no employee handbook, this was construed to be a "just cause" contract.

Others contend employee handbooks impede flexibility and limit employers' discretion. According to Richard J. Simmons, attorney, this argument is as much an endorsement for handbooks as it is a statement against them. "Although handbooks articulate guidelines for employers to follow and embody commitments made to employees, the documentation of these policies is more likely to enhance the employer's personnel practices than to frustrate them."

(Next month's article will discuss how an employee handbook should be written.)

This article was authored by David L. Hansen, a human resources consultant with McGladrey & Pullen, Des Moines.

Iowa Health Data Commission Update

THE IOWA HEALTH DATA COMMISSION has selected a vendor to measure severity using UB-82 uniform hospital billing information, certified a severity of illness/outcome system and approved a health data clearinghouse contractor.

Pittsburgh Research Institute, the low bidder, was chosen as the UB-82 severity system for severity adjustments at the patient record level. Approximately 300,000 records are in the database. SysteMetrics was the competing bidder.

MedisGroups, one of 2 systems being considered, was certified as the severity of illness/outcome system to be used in Iowa hospitals with 100 or more beds. The other system under consideration was Computerized Severity Index.

In conjunction with the selection of MedisGroups, the commission appointed a task force to recommend a method for assuring the collected data is cleared for quality before it is released. The task force is to report its recommendations by September, 1989.

Health Policy Corporation of Iowa (HPCI), the only applicant for Health Data Commission clearinghouse activities, was approved with the addition of several amendments and 2 conditions to its proposal. The first condition is that the commission will establish an advisory research committee to review and comment on methodology used in data collection and analysis. The second condition involves a review of the feasibility of the state assuming responsibility for health data collection and analysis, with the review completed in conjunction with the 1991 fiscal year state budget process.

The Health Policy Corporation of Iowa contract award is $226,000. Since release of the original request for proposal, an additional $149,000 was appropriated by the legislature, which also mandated additional clearinghouse responsibilities. A decision on whether to amend the present contract with HPCI to include the extra amount or to award a separate contract was delayed until the next regular commission meeting Friday, July 7, at 8:30 a.m. in the Department of Public Health's third floor conference room in the Lucas State Office Building.

The commission also voted continuation of Mary Ellis, director of the Iowa Department of Public Health (IDPH), as commission chairperson for the 1990 fiscal year and of Charles Palmer, director of the Department of Human Services, as vice chairperson. Other business included approval for release of 1988 hospital compilation data prepared by the Codman Research Group.

The commission chairperson announced a staff member will be retained in the IDPH to disseminate Health Data Commission information. This person will make presentations throughout Iowa to civic and fraternal organizations, gatherings of senior citizens and other community-based groups. Creation of this fulltime position is another step in distributing information collected by the commission to those who can benefit from it.

An earlier effort in dissemination of data by the IDPH involved a systematic approach to health promotion and disease prevention. This included Health Data Commission statis-

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

tics and has been referred to as the County Health Planning Initiatives Program.

After collecting data from a variety of sources, information was released in 1988 to each of Iowa's 99 counties which identified their major health problems. Morbidity data showed the leading causes of hospitalization for preventable diseases by age groups for each county.

In addition to using information from the Health Data Commission, the Centers for Disease Control provided incidence and prevalence estimates and the National Center for Health Statistics supplied national morbidity and mortality rates. Other data came from the Cancer Registry Program. The IDPH provided perinatal, substance abuse treatment and mortality data.

As a result of reviewing the data, some counties recognized new health problems while other counties' observations were confirmed. One county, for example, realized it had a problem with ischemic heart disease among 25 to 44-year-old residents since there was a substantially higher number compared to state and national data. In another county, a high injury rate appeared to be related to a local industry, justifying the need for a worksite intervention program.

In another county, concern was expressed over the prevalence of an infectious disease. The state epidemiologist was contacted for assistance in determining the extent and cause of the problem. In one age group, the disease appeared to be nearly 4 times the state rate.

A random sampling of hospital records of patients diagnosed with that disease was selected and variables were extracted. It became evident the rate of cases was excessive when compared to the rest of the state.

Further analysis of the records revealed the problem appeared to be related to the diagnostic criteria. On the basis of that information, several suggestions were made, including establishing criteria for the diagnosis through the Infection Control and Quality Assurance Committees. It was also recommended that hospital admission data for the disease be reevaluated a year later.

This is a sampling of the potential benefits of data collection, analysis and dissemination provided by the Health Data Commission. Future uses should continue to result in better health awareness and intervention activities.



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3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

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Medical News/Products and Programs

NEW LYME DISEASE IgM-SPECIFIC IFA TEST — Wampole Laboratories announces a Lyme (B. burgdorferi) IgM immunoflourescent assay. The test, which is available for research use only, will complement the company's existing IFA test, which is designed to simultaneously detect both IgG and IgM antibodies.

ANSAID: THE NEWEST ENTRY IN THE BATTLE AGAINST ARTHRITIS — *Ansaid Tablets (Flurbiprofen), produced by The Upjohn Company, has been cleared by the FDA for treatment of the 2 most prevalent forms of the disorder — rheumatoid arthritis and osteoarthritis. Ansaid, which contains the active ingredient flurbiprofen, is the newest of the nonsteroidal, anti-inflammatory medications, which relieve pain and suppress inflammation, to be introduced in the U.S. Flurbiprofen is one of the most widely prescribed antiarthritic medications outside the U.S. and has been available in Europe for more than a decade. Clinical trials have shown flurbiprofen to be effective at much lower doses than ibuprofen and aspirin in inhibiting the body's production of chemicals called prostaglandins, which produce inflammation. An average dose of Ansaid Tablets (200 to 300 mg of flurbiprofen daily) is equivalent to 2,000 to 4,000 mg of aspirin daily (about 12 to 13 aspirin tablets). In rheumatoid arthritis studies, Ansaid has been shown to improve mobility in as little as 7 days. Flurbiprofen has shown an overall incidence of side effects only half that of therapeutically equivalent doses of indomethacin and aspirin, which for years have been a cornerstone of therapy for arthritis. Ansaid also has shown only about half the gastrointestinal side effects of aspirin among frequent users.*

Like other nonsteroidal anti-inflammatory medications, Ansaid should not be used by people who have shown symptoms of allergies to it, to aspirin or to any of the other nonsteriodal anti-inflammatory medications. The most common side effects of Ansaid and the other nonsteroidal anti-inflammatory medications are gastrointestinal problems, which can range from simple discomfort to ulcers. Other side effects observed with various nonsteroidal anti-inflammatory agents include visual problems, fluid retention and edema, which may occur in patients with certain heart problems. In addition, nonsteroidal anti-inflammatory medications lower fevers. Patients on Ansaid should be informed of this in the event they might contract an infection for which fever would otherwise be available as a useful symptom for recognition of the illness.

TREATMENT OF HYPERTENSION — Marion Laboratories, Inc. has received FDA marketing approval for Cardizem® SR (diltiazem HCl) a new formulation of calcium channel blocker in sustained release capsules. For the treatment of hypertension, Cardizem® SR initial dosage is 90 mg twice daily (B.I.D.). Full antihypertensive effect is usually seen within 4 weeks of onset of treatment. The dosage can be altered as indicated for individual needs. Clinical studies have shown the product to be safe and effective. Cardizem® SR is available in sustained release capsules in 60 mg, 90 mg and 120 mg strengths. The sustained release B.I.D. dosage form should help eliminate noncompliance as well as side effects of more frequent dose schedules.

RHEUMATOID FACTOR LATEX AGGLUTINATION — *Rheumatex™ is available from Wampole Laboratories, the makers of Rheumaton®, the widely used red-cell test. Rheumatex™ was developed for laboratorians that prefer a latex agglutination methodology for detecting Rheumatoid Factor. The test comes in either a 100 test kit or a 2,000 test kit. The test has dating exceeding 12 months.*

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(Continued page 395)

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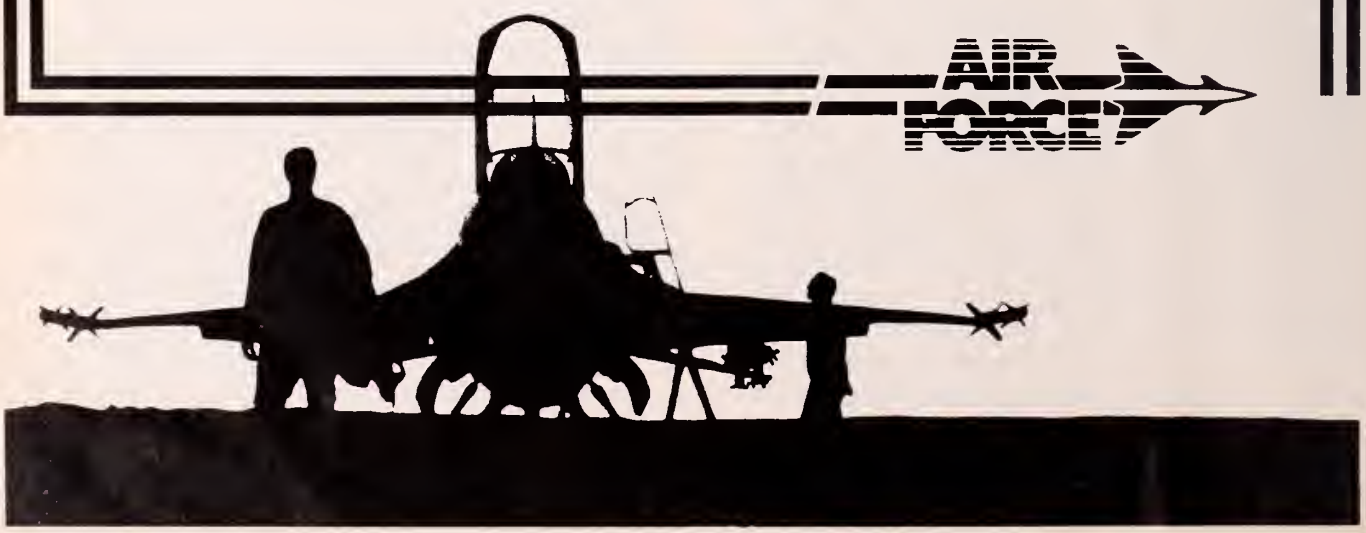
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COLIC SYMPTOMS REDUCED WITH SLEEPTIGHT® INFANT SOOTHER — *Concepts of infantile colic and its treatment remain controversial. A new product called SleepTight® Infant Soother that simulates the sound and motion of a car ride significantly reduced colic symptoms in 97% of the infants tested during a 3-year infant colic research project. The study, supported by the National Institute of Child Health and Human Development (NICHD), also found that 25% of the infants actually fell asleep during the evaluation period. The 2-part device consists of a vibration unit and a sound unit that simulates a car ride at 55 mph. Mounted underneath the crib, the vibration unit gently vibrates the crib while the audio unit, attached to the side of the crib, provides the sound of wind rushing past a closed car window.*

SleepTight® is distributed exclusively by Ross Laboratories, division of Abbott Laboratories. Because it is intended to reduce the symptoms of colic only after a physician has ruled out any organic cause, Ross will promote SleepTight® to health care providers only. Health care providers will, in turn, recommend the product to their patients. SleepTight® has been listed by the Food and Drug Administration as a medical device. Therefore, the product's cost may be reimbursable under health insurance programs.

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The Manual is authored by Don Elliott. His background includes over 25 years of investigative experience as a Naval Intelligence Officer, Retail Credit Administrator, and Owner of Collection Agencies.

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About Iowa Physicians

Dr. Elizabeth Siitari has joined the Pella Medical Center. Dr. Siitari received the M.D. degree from the University of Minnesota Medical School, Minneapolis, Minneosta and completed her residency at Methodist Hospital, St. Louis Park, Minnesota. **Dr. Greg Kosters,** Rock Valley family practitioner, recently received the Governor's Volunteer Award at ceremonies held at Dordt College in Sioux Center. **Dr. Gerhard Schmunk** has retired after 23 years as a radiologist at Jane Lamb Health Center in Clinton. Dr. Schmunk received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and completed his residency at Colorado General Hospital, Pueblo, Colorado. **Dr. Dave Sands** has joined the staff of Ottumwa Pediatrics P.C. Dr. Sands received the M.D. degree from the U. of I. College of Medicine and served his residency at the University of Kansas Medical Center. Prior to locating in Ottumwa, Dr. Sands practiced in Kingston, Pennsylvania. **Dr. David W. Beck,** neurosurgeon at Forest Park Medical Building, Mason City, recently became the first private practitioner in Iowa to be inducted into the Neurosurgical Society of America. Dr. Beck is one of 100 active members nationwide and 3 in Iowa. **Dr. Arthur L. McGilvra,** longtime family practitioner from Sioux Center, has retired after 43 years of medical practice. Dr. McGilvra received the M.D. degree from the U. of I. College of Medicine. **Dr. Kenneth Rodabaugh** has retired after 35 years of medical

(Continued next page)

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practice in Tabor. Dr. Rodabaugh received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and completed an internship at Madigan Army Hospital, Fort Lewis, Washington. **Dr. William E. Anderson, Jr.** has replaced Dr. Rodabaugh as Tabor's new physician. Dr. Anderson received the M.D. degree from the U. of I. College of Medicine and served his internship and residency at Harvard Medical School in Boston, Massachusetts. Prior to locating in Tabor, Dr. Anderson practiced in Mississippi for one year and Burlington for 11 years. **Dr. Michael Abrams,** director of ambulatory services at Broadlawns Hospital, Des Moines, has been appointed to the Crime Victim Assistance Board by Attorney General Tom Miller.

Deaths

Dr. George Tice, 72, Clear Lake, died June 9 at St. Joseph Mercy Hospital in Mason City. Dr. Tice received the M.D. degree from the U. of I. College of Medicine. Dr. Tice was a general surgeon in Mason City for over 41 years, retiring in 1979.

Dr. Wayne J. Foster, 97, Cedar Rapids, died June 16 at Meth-Wick Retirement Community in Cedar Rapids. Dr. Foster received the M.D. degree from the U. of I. College of Medicine and completed his residency at U. of I. Hospitals. He practiced otolaryngology in Cedar Rapids for 50 years, retiring in 1968. Dr. Foster was a life member of the Iowa Medical Society.

Dr. Luke Chang, 64, formerly of Mason City, died June 1 in Sacramento, California. Dr. Chang received the M.D. degree from the National Peking University Medical College, Peking, Hopei, China. He completed his residency at the U. of I. Hospitals and Clinics. Dr. Chang was in medical practice in Mason City for 29 years, retiring in 1988. He was a member of the American Society of Internal Medicine.

August 25, 1989
8:00 A.M. - 4:30 P.M.

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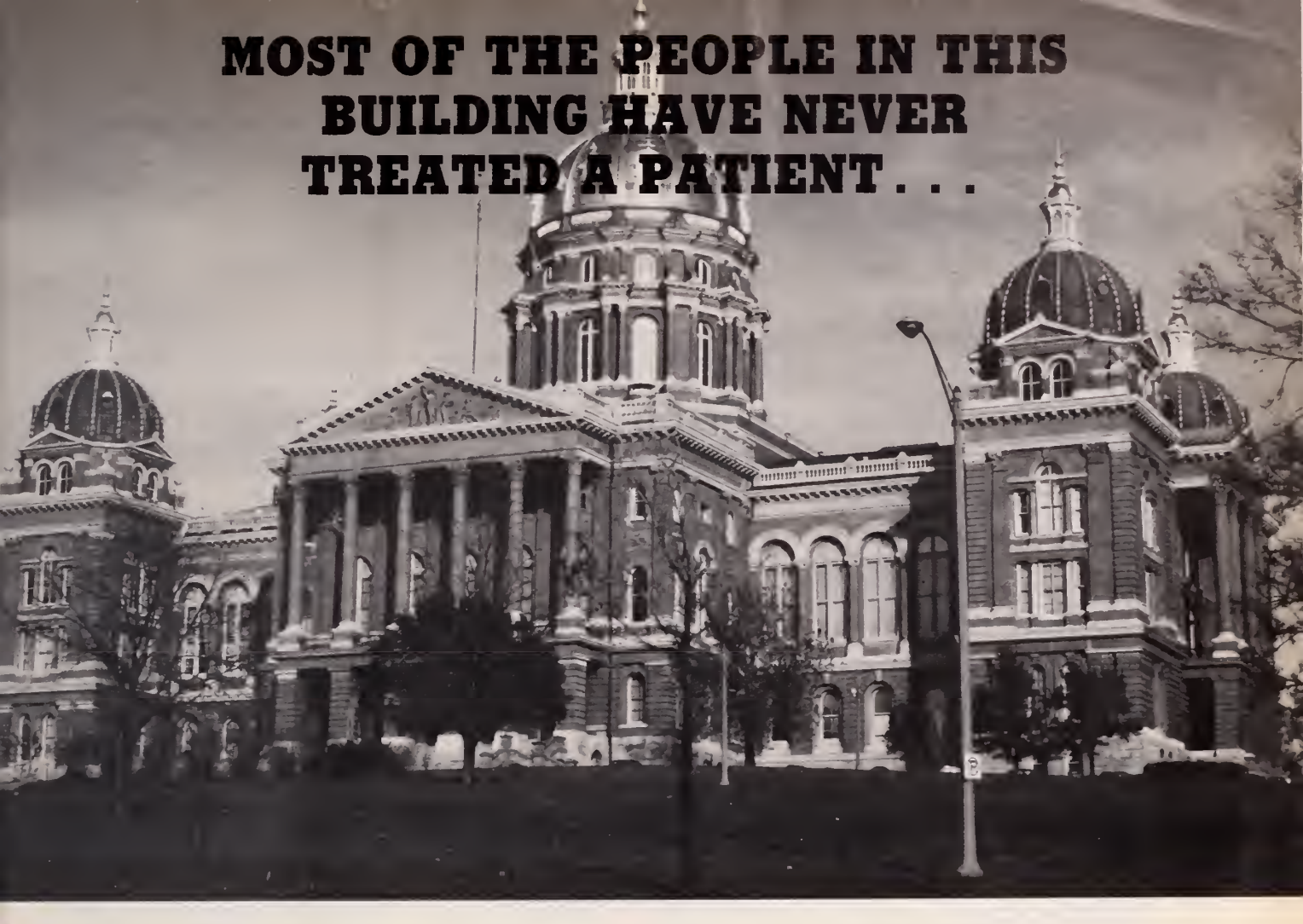
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Physicians 'Key Players' In ACS Efforts

THE AMERICAN CANCER SOCIETY is a voluntary organization dedicated to the control and eradication of cancer, and staff members at the ACS Iowa Division are quick to point out they depend heavily on Iowa physicians to help them reach this goal.

"The ACS staff concentrates on getting physicians involved because we can't institute programs without them," comments Dianne Woods, medical affairs director for the American Cancer Society. "Physicians are pivotal members of the health care team and almost everything we do involves them."

The ACS maintains a list of physician volunteers throughout Iowa who may act as the organization's local spokespersons, provide medical information for various ACS programs and serve in a variety of other public education and patient service functions.

"We work closely with family practice physicians because they're generally the first ones to see cancer patients," adds Ms. Woods. "In the near future, we will be sending a regular newsletter to Iowa family practice physicians. The newsletter will provide information about early detection, new resource materials and other issues."

Another part of the ACS function locally and nationally, says Ms. Woods, is to "help educate physicians." Therefore, the organization is also involved in continuing medical education programs which keep physicians abreast of the latest developments in cancer research and treatment. The ACS is also involved in continuing education for dentists, nurses and other health care professionals.

Because Iowa physicians have what Ms. Woods calls "local credibility," the ACS depends on them to spread the word regarding programs available to cancer patients and their families. Most service and rehabilitation programs require a physician referral. The ACS Reach to Recovery program (for breast cancer patients), and its laryngectomy and ostomy visitation programs all depend on physician referrals. Through these programs, certified and well-trained volunteers visit patients in the hospital or home to assist them in returning to normal life following surgery. The ACS is in the process of establishing CanSurmount programs, volunteer visitation programs for other cancer patients, across the state.

The ACS also focuses on patient education and offers a series of classes called "I Can Cope" which are coordinated by health professional volunteers in many Iowa counties. These classes provide an opportunity to learn about cancer treatment, side effects, nutrition and emotional issues in a group setting.

"It's our responsibility to keep people as informed as we can," concludes Ms. Woods. "Iowa physicians are key players in helping us fulfill this responsibility."

(For more information about services and educational materials available through the ACS, call 1/800/392-6446.)

August 1989

Iowa Medicine

VASOTEC®

(ENALAPRIL MALEATE) MSD

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients.

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction, rhythm disturbances; atrial fibrillation; palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia; an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia. In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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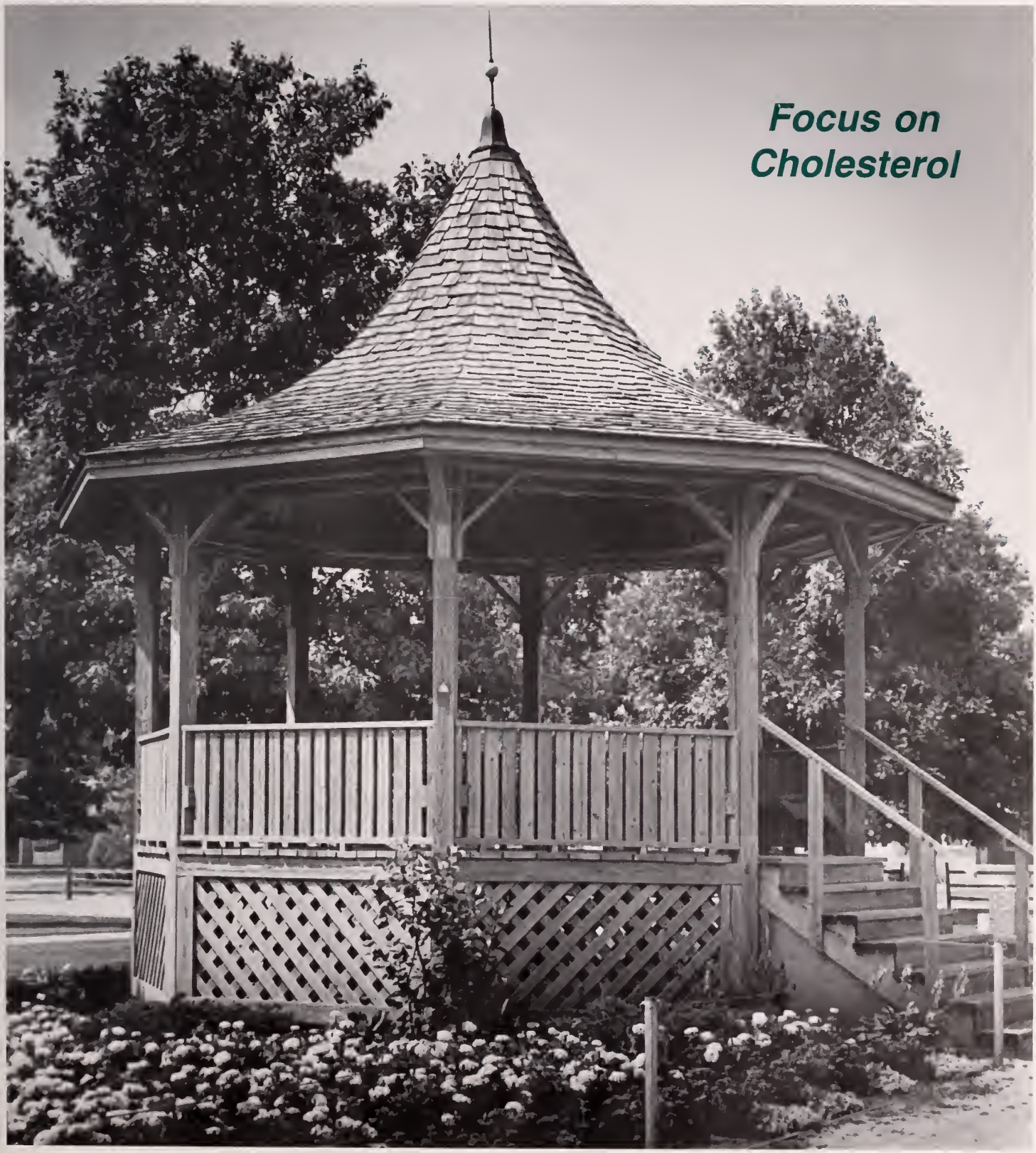
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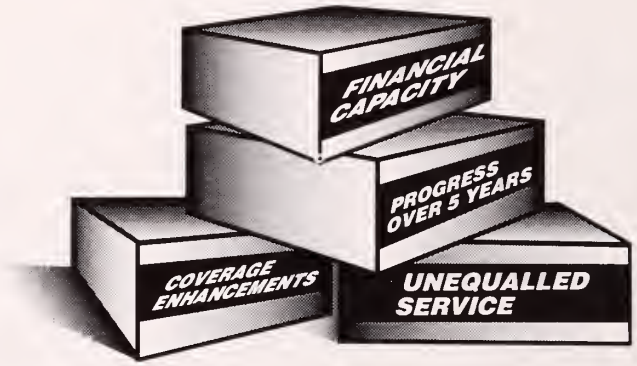
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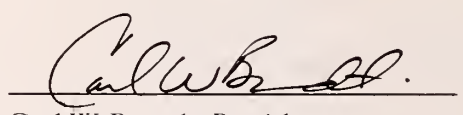
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Donald F. Rodawig, M.D.

President's Privilege



Why We Have Disaster Drills

THE IMPORTANCE OF A FINE-TUNED community disaster plan has never been thrown into sharper focus than in Sioux City, Iowa on July 19, 1989.

On that day, our attention turned to a cornfield outside that western Iowa community, where a DC10 crash-landed and broke into 3 pieces, leaving a trail of wreckage and injured people. On that day, people all over the world saw the competence and caring of Sioux City's health care workers. Amidst the tragedy, Iowans had reason to be proud.

Two hospitals — Marian Health Center and St. Luke's Regional Medical Center — had less than one hour to prepare for what would be one of the worst aviation disasters in U.S. history. Yet, dozens of physicians, nurses, paramedics, firefighters and National Guard personnel responded as a well-oiled machine to the tragic crash of United Airlines Flight 232.

Within 45 minutes after the jet went down in a cornfield near Sioux City's Gateway Airport, all of the approximately 40 critically injured patients had been transported to hospitals. In a little over 3 hours, all survivors had been evacuated from the site.

Of the 296 passengers aboard the crippled jet, 185 survived. Physicians who directed the passengers' treatment say many more would have died had the community not conducted such a well-coordinated rescue effort.

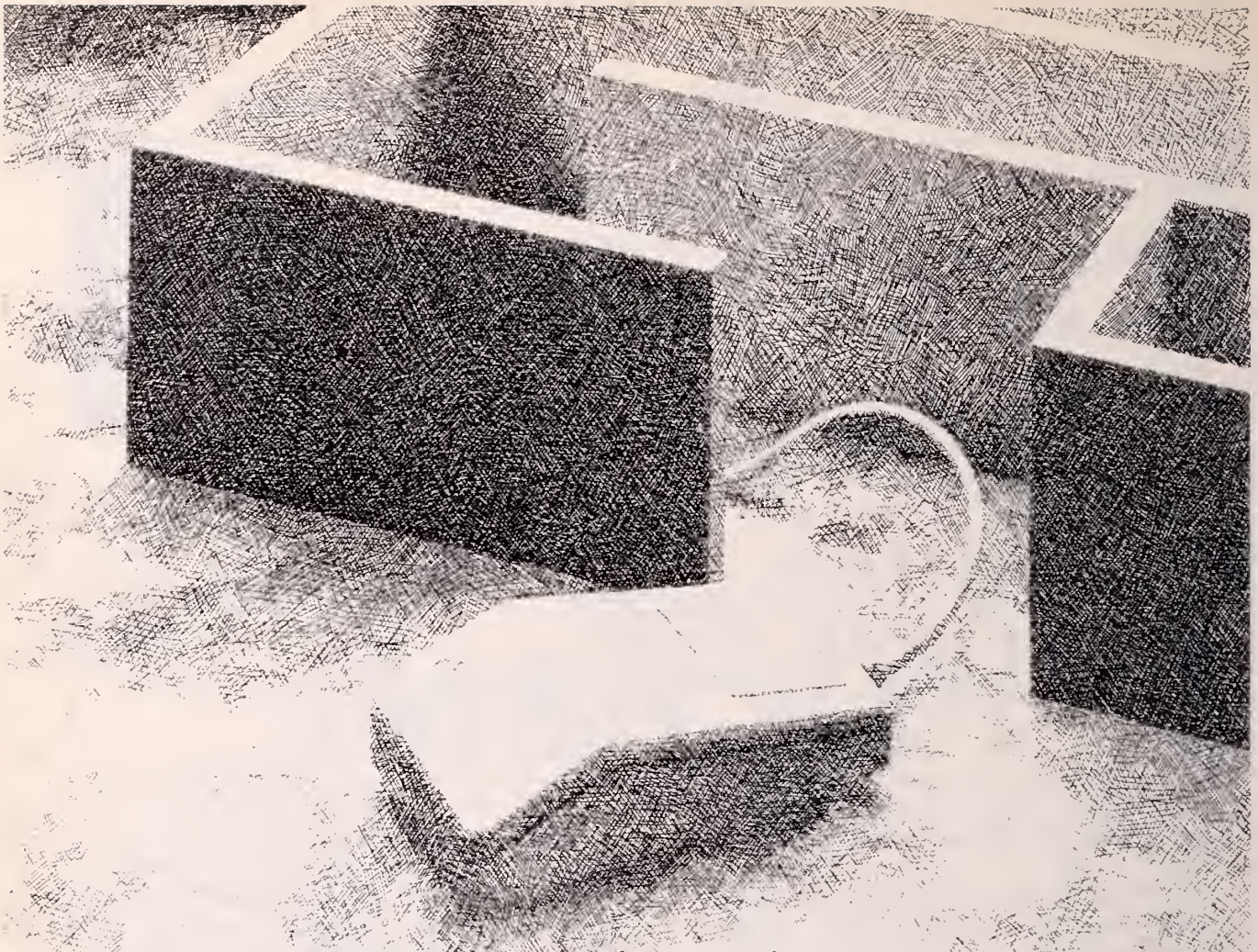
Sioux City's annual disaster drills played a vital role in the excellent and effective response July 19. Ironically, last year's drill simulated an airline crash involving 200 passengers. When the mock disaster became a reality, the plan fell into place with "impeccable timing," according to David Greco, M.D., the first physician on the crash scene.

Any of us who ever complained about having to go through disaster drills can find a lesson in the words of Scott Pennepacker, M.D., a Sioux City pathologist, "We've been doing disaster drills to the point of absolute boredom for years. I think we'll all take them a little more seriously now."

I wholeheartedly commend Sioux City physicians, nurses and other medical personnel for meeting the challenge so heroically.

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The Gazebo that Dr. Young Built

IF THE CLARION HISTORICAL SOCIETY choose a patron saint, it would have to be Dr. Richard Young.

When *IOWA MEDICINE* staff members visited that small northcentral Iowa town recently, it didn't take long to discover several notable landmarks in which Dr. Young has taken a very productive personal interest. In fact, the Clarion gazebo which so picturesquely graces this month's cover was Dr. Young's brainchild.



"My wife and I were in Dubuque and saw a gazebo," relates Dr. Young, a semi-retired family practice physician whose boundless energy belies his age. "She said, 'I wish Clarion had one of those.' "

In actuality, there was a gazebo in Clarion before the turn of the century but all that remained of it was an old picture postcard.

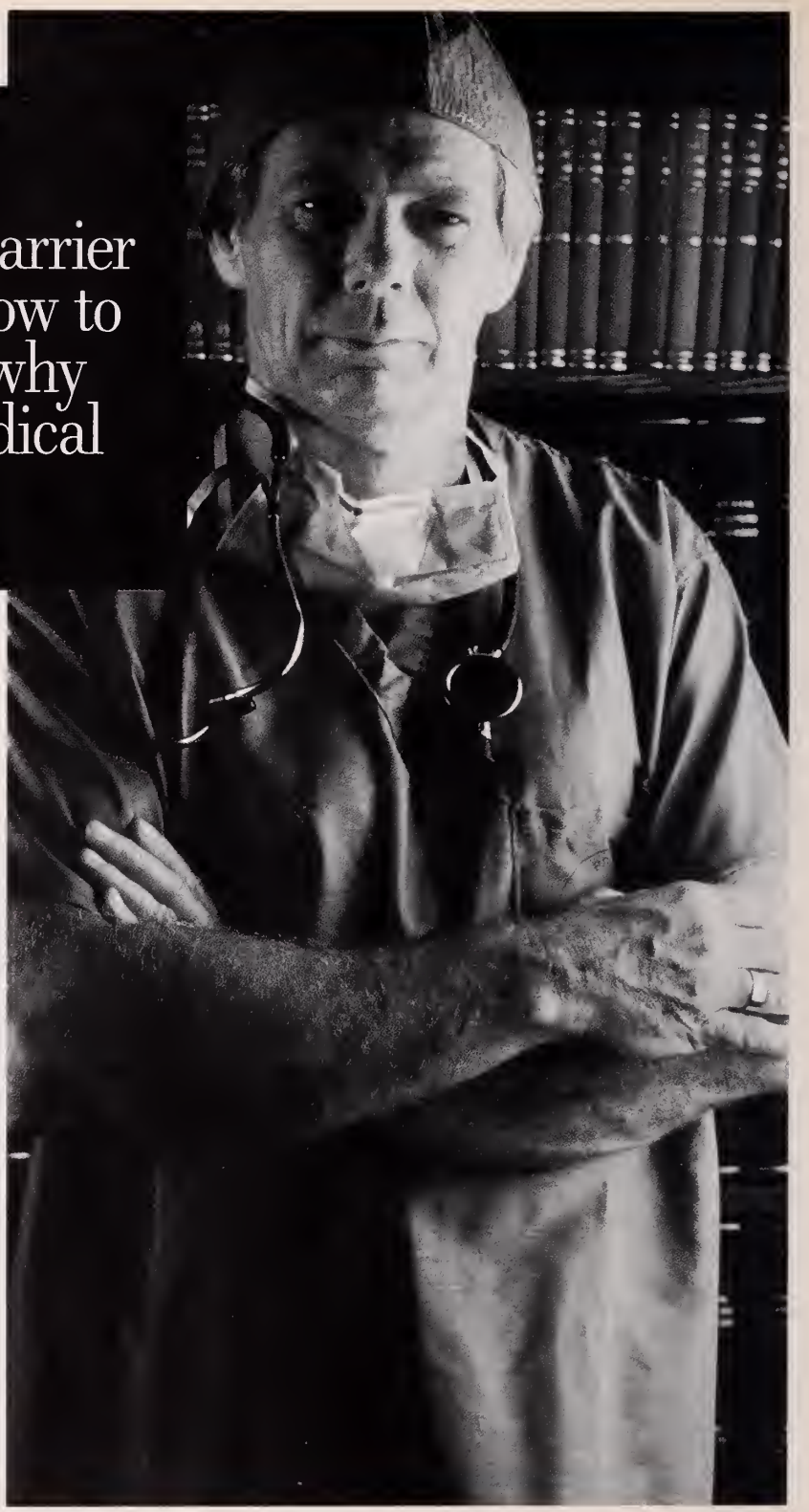
That was enough for Dr. Young who was, in 1977, a full-time physician and part-time master craftsman and artist. He used a micrometer and the postcard to make a scale design of the old gazebo, solicited contributions and began building.

While Dr. Young spearheaded the project, many other Clarion residents donated hours of labor. The gazebo, located in a city park in the center of town, was dedicated June 30, 1979 at a "Day of Music" which has now become an annual event in Clarion. Dr. Young won a national award from *Mechanics Illustrated* magazine for his work on the gazebo. Obviously not one to let the Clarion grass grow under his feet, Dr. Young has countless other projects in progress and spends hours in his well-equipped workroom. He was instrumental in saving and restoring the old Clarion railroad depot and schoolhouse. Both buildings are favorite haunts for visitors to Clarion.

Impressively, Dr. Young is also a talented artist and gardener. His home is decorated with several of his charcoal drawings and wood carvings, not to mention antique furniture he has restored beautifully. His well-groomed lawn is filled with flowers. And, visitors to the Young home just may be treated to a musical solo by Dr. Young's wife, Betty, an excellent musician who specializes in Blue Grass music on the fiddle and autoharp.

It's not easy to imagine one family having so much talent, but one thing is sure — Clarion is lucky to have the Youngs.

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Steve Seekins

Questions and Answers



AMA Targets Cholesterol

The American Medical Association's 'Campaign Against Cholesterol' is discussed by Steve Seekins, vice president of public and professional communications for the AMA.

What are the components of the AMA's Campaign Against Cholesterol?

The campaign has a variety of components directed to both physicians and the public. The AMA hopes to educate both groups about the dangers of high cholesterol. We want physicians to have the latest information on available treatments and how to advise patients with high cholesterol levels.

The physician education components include CME television programs and a physician's office kit. The public education components of the program include coverage in broadcast and print media, a cholesterol reduction course offered in 147 hospitals across the U.S. and a book entitled *Count Out Cholesterol*, available nationally in Waldenbooks and B. Dalton bookstores.

Why did the AMA single out cholesterol?

Heart disease is still our nation's leading killer, claiming over 500,000 lives each year. Many of these deaths are preventable if patients would make lifestyle changes. Many Americans understand the link between smoking, high blood pressure and coronary heart disease; however, fewer Americans understand the role played by high cholesterol.

Physicians, too, must be reminded of cholesterol's role in coronary heart disease. Today, only cholesterol levels below 200 mg/dl are considered acceptable and the AMA's campaign apprises physicians of this and other developments.

What are the objectives of the campaign?

The AMA hopes the national cholesterol average, currently about 210 mg/dl, will fall under 200 mg/dl.

Also, the AMA's mission statement calls for development of this type of program and the Campaign Against Cholesterol is one of many public health programs spearheaded by the AMA. An important part of the campaign is also providing physicians with the tools they need to help patients.

As James Sammons, M.D., AMA executive vice president commented, "When the war on cholesterol related heart disease is won, we will all be able to say we led the battle."

What are future directions for the campaign?

In 1990, the Campaign Against Cholesterol will begin to offer the cholesterol reduction course in worksites and will tailor the course so physicians can offer the program to patients in their offices.

For more information call Laura Quinn at 312/645-4444.

Letters to the Editor

Eye Opener

Dear Editor:

Your editorial on "Success" (The Editor Comments, July, 1989) was an eye opener. I liked it very much. — *Saheb Sahu, M.D., Des Moines, Iowa.*

Crisis of Values Erodes Health Care

Dear Editor:

In a society that spends $97 billion on alcohol and cigarettes, $3 billion on Super Bowl gambling and $300 billion on peacetime armaments, what can be wrong with spending 12% of our gross national product on health care? What good is anything else if we can't have a relatively pain-free life?

Nothing, one could answer, although there are those who find painful the idea that by the year 2000 roughly 20% of our GNP will be spent on health care, if health care costs continue to increase as they have.

They won't, I'm willing to bet. I'm also willing to bet it's going to be much more difficult for most of us to get — and pay for — quality care.

We're already seeing the evidence. The Census Bureau reported in 1986 that there are 37 million uninsured Americans. The Commerce Department tells us of over 40,000 American infant deaths annually. There are charges of health system corruption, conflict of interest, poor quality care, provider and insurer price gouging, antitrust violations and other patient abuses.

Republicans recommend a basic business model to solve health care problems. Democrats promote government as a solution. Both parties focus on the ineffectiveness and dishonor felt to be rampant among health providers. Features of both Republican and Democratic programs, have been implemented, thereby creating health businesses that are so regulated they cannot compete and a government model (Medicare and Medicaid) acting enough like a poorly managed business to give the appearance of a corrupted agency.

As a result, strategies to hold down costs are counterproductive, even chaotic. State and federal agencies, several HMOs and other major insurers have created rules that must be met before you can go to a hospital. The crazy part is each agency and insurer has different rules. The rules are based more on fiscal biases than on a rational scheme for fairly distributing health resources. The values that form the basis for payment seem to be payer or provider-centered.

Society must come to grips with the reality that provider troubles are only symptomatic of the real problem. Other possible symptoms include: $25 billion in profits made by passive stockholders in health companies; billions generated by consultants attempting to fix the health system; dying elderly patients kept alive on tubes because families cannot bear to grieve; young and middle-aged adults who want perfect bodies and minds, using millions of dollars on quack cures and fad treatments.

This country's health care "problem" represents, in reality, a crisis of values.

In a society that fails to establish values to stem teenage pregnancy, it is impossible to constrain infant mortality. In a society that has great difficulty accepting loss but finds no difficulty placing blame, it may be difficult to find consensus on those values that will help us reorder the health care system. The concept of personal sacrifice for the greater good seems foreign to many Americans and cultural selfishness may be coming to rest in our health care system.

Paul Starr, author of *The Social Transformation of American Medicine,* believes our health care crisis was created by "professional sovereignty," or control of the health care system by doctors' attempts to accure wealth and power. Some, however, believe the medical sovereignty — provider greed — is simply a reflection of society.

Our saving grace is the adaptability and responsiveness of the American electorate. The American conscience will awaken to attack inequity and needless suffering. It may take a while, but Americans will find the cure. — *Stephen Gleason, D.O., West Des Moines.*

Rural Health Conference

The Governor's Task Force on Rural Health is planning a Rural Health Conference for October 3 and 4 at Stouffer's in Cedar Rapids.

The conference is designed to provide an educational forum to improve rural health in Iowa. Physicians and other health care providers, purchasers and consumers are invited to the event.

For registration information, contact the Iowa Department of Public Health at 515/281-5787.

Psyllium in Metamucil Lowers Cholesterol Levels

A study published in the *Journal of the American Medical Association* says that psyllium, an ingredient in Metamucil, can have a significant effect on lowering blood cholesterol levels.

"The most significant part of this is it's the first study to demonstrate psyllium — a natural, soluble fiber — as a useful addition to a low-fat, low-cholesterol diet and shows it causes a further reduction in blood cholesterol," says Larry Bell, M.D., director of Cardiovascular Risk and Lipid Service at Hennepin County Medical Center.

Bell was one of 5 researchers who worked on the 20-week study during 1987-1989 while he was associate director of the Heart Disease Prevention Clinic at the University of Minnesota.

Bell says that for many people with elevated cholestrol levels, daily doses of psyllium combined with the proper diet may be all the therapy they need to control their high cholesterol. The same combination may also serve as an alternative to drug therapy for a significant number of people, helping them avoid the expense and side effects of drug therapy.

By the end of the study, nearly half the study subjects who initially were considered to be in the high-risk group because of their elevated cholestrol levels had shown enough improvement to be categorized in the borderline risk group. Similarly, almost half the participants who started out in the borderline risk group lowered their cholestrol levels to the point where they moved into the normal cholesterol level range.

LETTERS TO THE EDITOR

If you have a comment regarding something you've read in *IOWA MEDICINE* or an observation on conditions affecting the practice of medicine in Iowa, don't keep it to yourself. Share your thoughts in a letter to the editor. We'd like to hear from you.

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PRESENTS

"UPDATE ON INFECTIOUS DISEASES"

NOVEMBER 1, 1989

THIS 6-HOUR SEMINAR WILL IDENTIFY, DEFINE AND PROVIDE SPECIFIC INFORMATION RELATING TO RESEARCH DATA COLLECTION AND/OR CURRENT DIAGNOSTIC AND MANAGEMENT CONCEPTS IN THE AREAS OF:

AEROBIC AND ANAEROBIC INFECTIONS
HERPES
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NEUTROPENIA
PEDIATRIC MENINGITIS
NOSOCOMIAL INFECTIONS
BLOODSTREAM INFECTIONS
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LOWER RESPIRATORY TRACT
SURGICAL PROPHYLAXIS

REGISTRATION: 8:00 a.m.
PROGRAM: 8:30 a.m. — 3:45 p.m.

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Managing Lipid Disorders

HELMUT G. SCHROTT, M.D.
Iowa City, Iowa

Evidence that lowering cholesterol prevents coronary heart disease is well-established. The author discusses diet and drug therapies and discusses patient adherence problems.

CORONARY HEART DISEASE (CHD) causes more than 550,000 deaths each year — about one death per minute. There has been a decline in the mortality rate from coronary artery disease, but it remains the most frequent cause of death.[1] A number of factors have been identified as strongly associated with coronary heart disease.[2] Uncontrollable factors include male sex, advancing age and undefined genetic factors. Modifiable risk factors include smoking, high blood pressure, high blood cholesterol level, low HDL-cholesterol level (<35 mg/dl), severe obesity (>30% overweight), diabetes mellitus, physical inactivity and behavior patterns. Each of these appear to have a strong familial component. The focus of this article is management of hypercholesterolemia and other lipid problems.

Dr. Schrott is an endocrinologist associated with the University of Iowa Lipid Research Clinic.

Treatment Guidelines

The Consensus Conference on Lowering Blood Cholesterol to Prevent Heart Disease convened (Dec. 10-12, 1984) to review available data.[3] Genetic, experimental, epidemiological and clinical intervention studies overwhelmingly support a causal relationship between blood cholesterol level elevations and increased frequency of coronary heart disease. Findings from diet trials and drug intervention studies strongly support the statement that lowering blood cholesterol levels reduces coronary heart disease incidence and reduces progression of existing disease.[4-7] For every 1% reduction in blood cholesterol there is a 2% reduction in coronary disease rate. A 20% reduction in blood cholesterol level, e.g., 300 mg/dl to 240 mg/dl, would result in a 40% reduction in coronary heart disease risk, probably greater if intervention was begun earlier in life. Intervening after a myocardial infarction or coronary artery bypass surgery is associated with reduced mortality and decreased progression of atherosclerotic plaques (1 in 6 show reversal).

Adults 20 years old and older should have their cholesterol level measured. Persons with high blood cholesterol levels (>240 mg/dl) require fasting lipoprotein testing. Cholesterol levels may be classified as follows:

Category	*Total Cholesterol*	*LDL-Cholesterol**
Desirable level	<200 mg/dl	<130 mg/dl
Borderline-high risk	200-239 mg/dl	130-159 mg/dl
High risk	>240 mg/dl	>160 mg/dl

*LDL = Low Density Lipoprotein

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR SEPTEMBER 1989

Those with total cholesterol 200-239 mg/dl (borderline-high risk) were divided into 2 groups: 1) Those without definite CHD or 2 other CHD risk factors (one of which can be male sex) should receive dietary information and be rechecked annually; 2) Those with definite CHD or 2 other CHD risk factors (one of which can be male sex) should proceed to fasting lipoprotein analysis with further action dependent upon the LDL-cholesterol level, knowledge of HDL-cholesterol and the LDL/HDL ratio (infra vide).

CHD risk factors include family history of premature heart disease, cigarette smoking, high blood pressure, low level of HDL-cholesterol (<35 mg/dl), diabetes, history of stroke or vascular disease and obesity. Treatment of "borderline-high with risk factors" includes diet with progressive advancement to lower saturated fat and lower cholesterol intake, followed by treatment with drugs if necessary. Factors which mandate drug intervention might include LDL/HDL >3.0, or HDL-cholesterol <35 mg/dl, presence of 2 other risk factors or presence of heart disease (e.g., post-bypass surgery, post-angioplasty, post-myocardial infarction, etc.).

Diagnostic Evaluation

The LDL/HDL ratio, in borderline-high cases when LDL-cholesterol is >160 mg/dl, helps us make the decision to pursue more vigorous treatment including drugs: 3-4.5 ratio has moderate risk of CHD, >4.5 ratio has high risk of CHD. For example, after an initial diet trial a person has an LDL-cholesterol of 160 mg/dl and an HDL-cholesterol of 30 mg/dl (the ratio being greater than 5). This suggests high CHD risk and warrants further diet changes and/or drug therapy. If after initial diet intervention the LDL-cholesterol is 160 mg/dl but HDL-cholesterol is 60 mg/dl (LDL/HDL <3), follow-up with further diet changes alone is warranted.

If the total cholesterol is less than 200 mg/dl, LDL-cholesterol (LDL-C) is less than 130 mg/dl, LDL/HDL less than 3 and triglyceride level less than 250 mg/dl, no further work-up is needed. Lipid levels should be repeated in 5-year intervals.

If an elevated cholesterol and/or triglyceride level is noted, look for secondary causes, e.g., renal disease, liver disease, diabetes, thyroid disorders and drug usage (especially thiazides and beta-blockers.) If treatment of the secondary cause corrects the lipid disorder, no additional therapy is needed. In the case of anti-hypertensive drugs, initiate diet therapy first. If diet therapy does not correct the problem, a switch in anti-hypertensive therapy (from thiazides or beta-blocker to ACE inhibitor or calcium channel blocker) can be tried. If treatment of the underlying condition or switching anti-hypertensive therapy only partially corrects the lipid disorder, treat the hyperlipidemia directly.

TABLE 1

Classification	*Management Approach*
HIGH LDL, NORMAL TG	
1) Very high CDC risk:	
LDL-C>250 mg/dl	Diet + combination drugs
2) High CHD risk:	
LDL-C175-250 mg/dl	Diet + single drug
3) Borderline high CHD risk:	
LDL-C160-175 mg/dl	Diet*
HIGH LDL, HIGH TG(>250 mg/dl)	Diet; sometimes drugs
HIGH TG, NORMAL LDL(<160 mg/dl)	
1) Pancreatitis risk:	
TG>1,000 mg/dl	Low fat diet (and drug)
2) Modest CHD risk:	
TG 250-1,000 mg/dl	Diet*

*Drugs may be needed in persons with CHD.

Classification of the Lipid Disorder

Three broad classifications help us in therapeutic management (Table 1). The classification system explains the mechanism of the lipid abnormalities. The high LDL, normal TG group probably has some defect in removal of LDL-cholesterol from plasma. This may either be dietary, metabolic, genetic or some combination in causation. The high LDL, high TG group suggests a state where VLDL overproduction is occurring associated with or without diminished removal of LDL-cholesterol. The high TG, normal LDL group suggests a defective chylomicron clearance with or without VLDL overproduction (pancreatitis risk), or an overproduction of VLDL by the liver (modest CVD risk) with good LDL clearance.

Elevated triglyceride (TG) levels alone are a weak risk factor for development of coronary disease.[7] Only when they are quite elevated as in chylomicronemia (TG>1000 mg/dl), is the

risk appreciable for developing pancreatitis and eruptive xanthomas. Triglyceride elevations should be considered a marker for other conditions such as obesity, diabetes or other drug therapy. The modest risk for CHD may be related to the underlying condition causing hypertriglyceridemia.

Diet Therapy

It cannot be stressed enough that diet therapy is the cornerstone of treatment. A supportive attitude on the part of the physician is important. Some patients respond to dietary therapy offered in groups, some want personal dietary counseling and some will achieve satisfactory results through self-help books. We recommend referral to a dietitian. However, the diet will need to be started in the physicians's office and we must repeatedly encourage patients to diet.

For hypercholestrolemia (e.g., high LDL, normal TG) the most effective dietary strategies, in descending order of effectiveness, are reduction of saturated fat, modest increase in polyunsaturated and monounsaturated fat and reducing cholesterol intake. Since saturated fat and cholesterol are usually found in the food supply together, restricting one will usually restrict the other. The exceptions are eggs and organ meats, which are high in cholesterol and low in saturated fat; and saturated vegetable fats (e.g., coconut and palm kernel oils) which are high in saturated fat and have no cholesterol.

For hypertriglyceridemia (triglyceride level between 250-1,000 mg/dl) effective dietary strategies include weight loss, stopping alcohol ingestion and reducing total fat in the diet. If chylomicronemia (usually triglyceride levels >1,000 mg/dl) is present because lipoprotein lipase activity is reduced or absent, an initial period of 5-7 days, with no fat in the diet, is needed to clear the chylomicrons from fasting plasma. Thereafter, the fats can be gradually increased in the diet. A lipid lowering agent such as Lopid is usually added, although its impact is primarily on VLDL production and VLDL removal component and not on the chylomicron removal sequence.

Drug Therapy

Drug therapy is usually reserved for individuals who have not responded to an adequate diet trial. In persons with concomitant or evolving disease (e.g., angina, post-angioplasty, post-coronary artery bypass graft, post-myocardial infarction, or severe hyperlipidemia) the clinician may shorten the diet trial or add the drug concurrently. The diet reduces the amount of medication the patient requires. For patients with CHD and LDL-cholesterol >160 mg/dl the goal is to reduce LDL-cholesterol to less than 130 mg/dl (equivalent to cholesterol <200 mg/dl). The diet period may be prolonged in the very young and very old. Table 2, on the following page, is a summary of the medications used to treat lipid disorders (neomycin sulfate, clofibrate and dextrothyroxine are not included).

With high LDL-cholesterol, normal TG, bile acid sequestrant or resin is the drug of choice since it is not systemically absorbed and has been shown to lower risk of CHD. Resins remove cholesterol from the body by binding to bile acids and preventing reabsorption in the terminal ileum. Since more bile acid formation occurs in the liver to compensate for losses into the stool, the liver cells increase the number of LDL receptors. This increases clearance of LDL-cholesterol particles from plasma. The resins are most effective if taken twice a day, at breakfast and supper. It is useful to add the resin to the liquid in the container, cover and shake. A juice or a flavoring agent, e.g., Tang, Crystal Light, orange juice, can be added to enhance palatability. The available resins are as follows:

Name	*Unit Dose*	*Usual Dose*	*Full Dose*
Questran	cholestyramine 4 g. per scoop or packet	16 g/day	24 g/day
Colestid	colestipol 5 g. per scoop or packet	20 g/day	30 g/day

At the usual dose the average cholesterol reduction is about 20% (about 4-5% per scoop); at full dose the average cholesterol reduction is about 25-30%. I usually recommend Questran first due to its palatability. Some individuals who have intolerable bloating with Questran will have no problem with Colestid, and vice versa. To minimize side effects such as epigastric distress or constipation the patient gradually increases the dose to allow gastrointestinal adaptation.

Should constipation occur add bulk laxatives, reduce dose while adding bulk laxatives

(Continued next page)

TABLE 2

Drugs	Reduce CHD Risk	Long-Term Safety	LDL-C Lowering	Side Effects	Special Precautions
Cholestyramine or Colestipol	Yes	Yes	15-30%	Bloating and constipation; dose dependent	Can alter absorption of other drugs. Can increase TG levels.
Nicotinic acid[a]	Yes	Yes	15-30%	Flushing, upper GI, hepatic	Raises HDL-cholesterol. Test uric acid, glucose and liver function.
Gemfibrozil[a]	Yes*	Yes	5-15%	GI, hepatic/muscle pain	Monitor liver function/ CPK. Raises HDL-cholesterol and may raise LDL-cholesterol.
Lovastatin	Not proven	Not estab.	15-40%	GI, hepatic/muscle pain	Monitor liver function tests every 6 wks. Slit lamp exams every 6 months.
Probucol	Not proven	Not estab.	10-15%	GI, eosinophilia, EKG	Lowers HDL-cholesterol. Prolongs QT interval.

*Helsinki Heart Study, New England Journal of Medicine, Nov. 12, 1987.
[a]Especially useful if triglyceride levels are elevated.

or stop entirely, start bulk laxative and then re-start medication slowly increasing the dosage. In older patients I recommend oat bran and/or Metamucil (psyllium) as part of diet therapy and add resin later. If the patient is on drugs such as digoxin, coumadin, thiazides or thyroxine, I recommend taking the other medication on arising and the breakfast resin dose 30-60 minutes later.

Niacin (nicotinic acid) in doses of 3-9 g/day (1-3 g/t.i.d.) blocks production of VLDL by the liver and decreases the amount of LDL coming from VLDL. The patient can expect a 15-20% lowering of LDL-cholesterol; with a 20-40% increase in HDL-cholesterol. It is contraindicated in Type II diabetes, peptic ulcer disease and untreated symptomatic gout. Flushing occurs commonly, especially when starting treatment, and can be made worse if taken with hot drinks. Pre-treatment with one aspirin can minimize flushing; if patient is on coumadin, aspirin is contraindicated. The usual treatment start-up schedule is 100 mg t.i.d. with meals for 7 days (I prescribe 126-100 mg tablets), 200 mg t.i.d. for 7 days, 300 mg t.i.d. for 7 days; then switch to 500 mg tablets, start 500 mg t.i.d. for 7 days, then 1,000 mg t.i.d. It is important to evaluate liver function, glucose and uric acid before and after full dose is reached, then every 6 months.

Other contraindications (beside non-insulin dependent diabetes, active peptic ulcer disease and gout) include cardiac arrhythmias, hepatic disease and asthma. If niacin is used in Type I diabetes, be prepared to adjust the insulin prescription. I have used it in patients with simple cardiac arrhythmias without problems. The side effects, besides flushing, include hypotension, headache, pruritis and acanthosis nigricans. Sustained release formulations can be used if side effects are problematic, but are usually less effective.

Lopid (gemfibrozil), 600 mg twice a day, is most effective when the triglyceride level is also elevated. Lopid may reduce production of VLDL by the liver, but mainly it increases removal of VLDL remnants before they are converted to LDL particles. A 5-15% lowering of LDL-cholesterol can be expected. It also increases HDL-cholesterol (a favorable rise); however, the average rise is 8-9%, whereas niacin can cause a rise of 20-40%. Long-term safety appears good and effectiveness in reducing CHD has recently been reported.[8] Sometimes LDL-cholesterol may rise sigificantly in persons who initially had a triglyc-

eride elevation; this may be considered deleterious. In the Helsinki Heart Study patients with triglyceride elevation obtained the greatest benefit.

Drug Side Effects

Potential side effects include epigastric and abdominal pain, nausea, diarrhea, myalgias with increased CPK levels, anemia and leukopenia, abnormal liver enzymes and hepatocellular damage, cardiac arrhythmias and potentiation of the effect of coumadin.

If response is inadequate, trial of a second-line drug may be warranted. None of the second-line drugs have been shown to reduce the incidence of heart disease. These drugs include lovastatin (Mevacor) and probucol (Lorelco). Neomycin sulfate and dextrothyroxine are not recommended. Atromid-S (clofibrate) may be used if the patient cannot tolerate Lopid.

Lovastatin (Mevacor) is used in doses of 20-80 mg daily. I usually begin 20 mg at bedtime or supper and evaluate response 4-6 weeks later, then if needed increase dose to 20 mg twice a day, increasing as needed. The retail cost per 20 mg tablet is approximately $1.56; hence, the cost ranges from $46.00 to $187.00 per month. The long-term safety of these drugs is yet to be established. I reserve lovastatin for familial hypercholesterolemia or for persons with established heart disease who have not had an adequate response.

Lorelco (probucol), 500 mg twice a day, binds with LDL and increases its non-receptor mediated uptake and removal. It has a very long half life (40% of drug level remaining after 12 weeks off). Unfortunately it lowers HDL-cholesterol by 20-30%. Again, long-term safety and effectiveness in reducing CHD is not known. Side effects of probucol include diarrhea, nausea, flatulence and eosinophilia. Although prolonged QT intervals have been reported in dogs, the occurrence in humans is uncommon. I only use this drug when everything else has failed.

Neomycin sulfate, 2 g/day, interferes with the enterohepatic circulation of bile acids. Because of potential ototoxicity, obtain an audiogram every 3 months. It also has a potential for nephrotoxicity. I do not use this drug.

Dextrothyroxine is not recommended because of the increased sudden death rate which occurred in participants with pre-existing heart disease in the coronary drug project.[9]

Combination Drug Therapy

Combination drug therapy needs to be used when LDL-cholesterol levels are initially high and response to diet is inadequate, especially when attempting to reach the goal (LDL-cholesterol <130 mg/dl). The available combination regimens listed in order of safety, effectiveness and preference, are as follows: 1) resin and niacin; 2) resin and gemfibrozil; 3) resin and lovastatin; 4) resin and probucol.

The preferred combination is resin and niacin or gemfibrozil since it has been shown to delay progression and reverse lesions in post-coronary artery bypass graft patients and reduced CHD risk. The combination of resin and lovastatin can lower cholesterol up to 50% of baseline and may become the favored approach when the safety of lovastatin has finally been established. A mix of niacin and lovastatin is also a potentially attractive combination which needs to be evaluated. Finally, triple drug therapy is sometimes necessary, e.g., resin, lovastatin and niacin.

For patients with high LDL, high TG diet therapy, weight loss, alcohol restriction and dietary fat reduction will lower triglyceride levels (decrease VLDL production) and may convert the lipid disorder to hypercholesterolemia alone (reveal an LDL clearance problem); hence, LDL cholesterol level may rise further. For "High LDL, High TG," if drug therapy is needed, start with niacin or Lopid (not both). If LDL-cholesterol is still high on either niacin or Lopid, you may need to add a resin.

Fish Oil

For patients with triglycerides >1,000 mg/dl (normal LDL) diet continues to be the most important and difficult mode of treatment, particularly a diet composed of less than 10% of calories as fat. Initial induction with a zero fat diet for a short time is recommended. Drug therapy, either Lopid or niacin, is commonly used even though efficacy is not proven. When diabetes is present, I usually use Lopid, 600 mg b.i.d. Some studies suggest the value of fish oils. The salmon diet provided 20 g of omega-3 fatty acids a day and dem-

(Continued next page)

onstrated a significant reduction in blood lipids.[10] This equates to 40-50 capsules of fish oil per day. At least 3-5 capsules of fish oil with each meal are needed to demonstrate some effect. Paradoxically, fish oil capsules can increase LDL-cholesterol levels. Currently we recommend 2-3 fish meals per week and do not recommend fish oil capsules.

When triglycerides are 250-1,000 mg/dl after diet implementation, we recommend the same drugs as those for much higher triglyceride levels. Lopid or niacin appear more effective when triglycerides are in this range. Since rises in LDL-cholesterol can be seen with Lopid, I prefer a trial of niacin first.

Adherence Problems

Hypercholesterolemia management might be similar to treatment of hypertension. A person with hypertension will undergo repeat testing to confirm diagnosis and search for secondary causes; treatment with diet may be recommended followed by drug therapy if necessary. Changes in drug therapy may be necessary on the basis of the side effect profile or ineffectiveness of treatment.

Non-adherence to regimens probably accounts for the major cause of treatment failure. Half of all hypertensive patients stop their therapy in the first year of treatment. There is no reason to expect the treatment of hypercholesterolemia will be any less challenging.

There are 3 general strategies to prevent adherence problems. First, learn if the patient has any misconceptions regarding the regimen and correct them. Second, adapt the intervention(s) to the patient's lifestyle, if possible. This includes allowing for some choice in the selection of dietary intake within certain guidelines and a willingness to modify drug dosages or frequency in an effort to solve scheduling problems. Third, the care giver must help the patient find ways to involve the social support structure to enhance success.

Remediation of adherence problems requires ongoing effort. If the regimen is perceived as too complex or difficult to follow, attempt to simplify the regimen. It may be necessary to schedule more frequent appointments or involve a family member. If poor memory is a problem, the use of cues (e.g., checks on a calendar, red dots on the refrigerator, reminders from family members) can be helpful. Sometimes the blood cholesterol goal needs to be revised. Finally, referral to a specialized center may be necessary to confirm your diagnosis and reinforce the seriousness of the situation.

How the physician conducts his/her medical practice may also influence adherence. This includes scheduling convenient appointment times and keeping waiting time short.

Using patient tracking procedures, or calling patients about upcoming or missed appointments, can be helpful. Referral to other health professionals such as dietitians or exercise physiologists can enhance the care. Most important is the quality of interaction between the physician and patient.

Summary

We have reviewed the importance of treating hypercholesterolemia and hypertriglyceridemia. Unfortunately, most physicians are not experienced in prescribing diets to lower blood cholesterol; the use of cholesterol lowering drugs, especially resins and niacin, is not within the experience of most doctors. Although promising medications are on the horizon, the long-term safety of these drugs is not determined.

References

A more detailed version of this review and an extensive reference list can be obtained from the author. The references are also available from *IOWA MEDICINE.*

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OCTOBER 4, 1989

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Marion E. Alberts, M.D.

The Editor Comments



Nuts to the Rats

Men who have excessive faith in their theories or ideas are not only ill prepared for making discoveries; they also make poor observations.
— Claude Bernard (1813-1878)

BASED ON ANIMAL STUDIES and genetic and morphological data relative to humans, there is no doubt lowering cholesterol levels reduces cardiovascular heart disease (CHD) risk. This issue of *IOWA MEDICINE* addresses this relationship. Prevention studies have demonstrated conclusively a definite decrease in low density lipoprotein cholesterol (LDL) is associated with a significant decrease in the incidence of myocardial infarction and CHD death.

There have been ups and downs in development of these conclusions. Originally our total concern was with hypercholesterolemia. We had no knowledge or consideration of specific lipoprotein fractions (HDL, LDL, VLDL) and triglycerides. The primary concern is now LDL cholesterol levels. Yet, controversy remains. Recently, I read an account from Utah that a group of people who ate a lot of nuts had a higher than expected immunity from CHD. Of course these people had a lower incidence of some of the other risk factors (e.g., smoking).

The media bombards the public with information regarding cholesterol content of foods. We are admonished to avoid palm and coconut oils. Sunflower and safflower oils are preferred by some. The cholesterol content of foods is not the only concern. Alar had its day recently. Several years ago we were warned about the dangers of eating bacon. Another study based on rat experiments warned of risk to those who consumed charcoal broiled meats. Rat experiment results are continuously extrapolated to possible risk for human beings. We are not rats, although we are often accused of involvement in a "rat race."

I do not imply the research is invalid. My plea is that the results of the research be reported in terms that make a more reasonable impact in the minds of lay persons. The media, as well as food manufacturers and processors, have a responsibility to stop causing undue concern and mental stress in people who are unable to see the invalidity of much that is reported.

When valid research based on human responses demonstrates facts germane to our health, such data is acceptable. Data based on invalid research on rats with extrapolations that are not applicable in a true sense to humans is a disservice to everyone. Unfortunately such data are often considered newsworthy and the reports are more harmful than useful. The data that is now forthcoming regarding cholesterol levels and CHD risk appear valid, but promotions by certain groups of our population as well as inappropriate media exposure is detrimental. Researchers must be true to the facts, the facts must be valid as applied to humans and the interpretation of the data must be without compromise. Until then, nuts to the rats. — *M.E.A.*

Richard M. Caplan, M.D.



CME Notebook

Two CME Models Gone

With heavy spirit I write of the passing of 2 who mattered greatly to me — as teachers, role models and friends. They likely serve similarly for many who will read this, because Dr. Robert Hardin's career at the University of Iowa College of Medicine spanned the years from his entry as a student in 1935 until his death in 1988, and Dr. William B. Bean served from 1948 until his death on March 1 of this year.

Bob Hardin comes to mind because the University's Health Sciences Library was recently re-named the Hardin Library for the Health Sciences. That is an extremely fitting designation, since his recognition of its need and his personal, highly successful fund-raising effort did so much to bring it into being. In his 1974 dedicatory remarks, Bob said:

> A library is a place that belongs to scholars, whether they be students new to scholarship, or lifetime scholars from our faculties or the practicing professions . . . a place where scholars can synthesize a personal body of knowledge, add new knowledge, record their own contributions . . . and, through studying the history of the healing arts, gain perspective of great value in facing the uncertainties of the future.

Much else could be said of him, but this is not a place for a general eulogy. Instead, I will refer only to what always impressed me as a stunningly courageous effort he undertook, after being totally removed from clinical teaching and patient care for 12 years to serve as dean of the College of Medicine and then university vice-president for health affairs. In 1975 he returned to his long-term home base in the department of internal medicine and resumed work as teacher, investigator and staff physician.

Those years of administrative "leave" saw enormous research expansion in American medicine with correspondingly huge changes in diagnostic and therapeutic technology, medications and procedures. To resume a teaching and clinical load in a broad discipline at age 62, after such a hiatus, would have been unthinkable to all but such an able, dedicated person as he. He told me advances in cardiology challenged him most. He met his needs through the usual modes: reading, attending conferences, and discussing patients with colleagues.

Bill Bean experienced a similar hiatus. Four years after stepping down as head of the department of internal medicine, which he led for 22 years, he agreed to direct the Institute of Medical Humanities, University of Texas Medical Branch in Galveston. His connection to clinical medicine was not broken, but from 1974 to 1980 he concentrated on teaching and directing the kind of scholarship done in the medical humanities, where the medical ramifications of ethics, history, literature, theology, law and anthropology hold center stage. In the summers he returned to Iowa City, where he participated in teaching and clinical work, as he did during the several years after his full retirement back to Iowa City. The same sources of continuing education served his needs, as they have for so many. And how well they served him — the combination of an agile mind and strong desire are unbeatable.

Both these men illustrated vividly the eager, successful pursuit of learning as a lifelong effort and passion. Their example serves us well and will long survive them.

Dr. Kaplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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Employee Handbooks: The Choice is Yours

(Editor's Note: Last month's article dealt with the controversy surrounding employee handbooks. This article discusses how a handbook should be written.)

A WELL-DRAFTED AND CONSISTENTLY applied employee handbook can serve a number of useful purposes:

- It promotes fairness and evenhanded treatment of employees and strengthens recruitment efforts.
- It functions as a valuable personnel relations tool by explaining benefits to employees.
- It enunciates standards of performance applicable by all supervisors and promotes consistent treatment of employees.
- It may help avoid or defend against discrimination charges.
- It should reinforce employee confidence in the integrity and fairness of the employer's policies and enhance morale and productivity.
- It clarifies benefits and the conditions of eligibility.

The employee handbook must be carefully written to achieve these advantages. Unfortunately, though employers would like to promote a "family" spirit they must avoid language that could be construed as contractual and thereby preclude certain actions. However, the handbook is a communication tool which should elicit employee understanding and cooperation. Many times overly protective "legalese" is used which is difficult to understand and could have a negative impact. Samuel Cook, chairman of the labor and law department of an eastern law firm, states, "Depending on how strongly the handbook's legal caveats are worded, they may tend to undermine the human relations value of such statements against the possible detrimental impact on employee moral and security."

The medical office or clinic should take certain precautions in drafting an employee handbook:

- It is important to maintain the "employment-at-will" concept throughout the handbook. This strategy reinforces the employer's position that the employment relationship has no contractual basis.
- Carefully constructed "disclaimers" must appear throughout the handbook. These disclaimers should maintain there is no contractual basis for the employment relationship and that the employer reserves the right to change, adopt or eliminate any handbook policy.
- A "superceded" statement should be included for all revised policies or issuance of an updated handbook.
- An "acknowledgment form" should be provided to employees. This form is to be signed by the employee indicating the employee has received and understands the contents of the handbook and confirms the employment relationship has no contractual basis.

Risk is not limited to the doctor/patient relationship and proper medical practices; medical offices and clinics need to address risk associated with the employment relationship. A logical place to start is an up-to-date employee handbook. The information in this column is general and should not be acted upon without first seeking professional guidance.

This article was authored by David L. Hansen, a human resources consultant with McGladrey & Pullen, Des Moines.

Behavioral Risk Factor Surveillance System

THE IOWA DEPARTMENT OF PUBLIC HEALTH (IDPH) has identified cardiovascular disease as the number one health problem in Iowa. Data from death certificates and other sources show the annualized 1984-86 mortality rate from ischemic heart disease is 253 per 100,000 population as compared to the national rate of 217 per 100,000 population.

High blood cholesterol, high blood pressure and cigarette smoking are the 3 major risk factors for cardiovascular disease. These risk factors can also be controlled by making lifestyle changes. How do Iowans rate with their lifestyle behaviors? The Behavioral Risk Factor Surveillance System (BRFSS) is providing some answers.

Data Collection

In 1981, the Centers for Disease Control (CDC) began to assist state health departments in administering statewide telephone surveys entitled the Behavioral Risk Factors Surveys.

These Behavioral Risk Factor Surveys (BRFS) permit states to collect information regarding the prevalence of self-reported health behaviors using relatively low cost telephone survey methodology. The behaviors surveyed relate to the 10 leading causes of death, including: cholesterol, cigarette smoking, hypertension, overweight, seat belt usage, physical inactivity and alcohol use.

A surveillance system was begun in 1984. Participating states conduct monthly interviews for a year or longer. Thirty-five states participated in the 1987 Behavioral Risk Factor Surveillance System (BRFSS), covering about 75% of American adults.

The goal of the BRFSS is to provide data to identify health promotion and disease prevention priorities for the public and private sectors in Iowa. Specific objectives are to determine the state-specific prevalence of personal health behaviors related to the leading causes of premature death and to advance the understanding that health-related behaviors are critical indices of health.

Interview Process

The IDPH, Division of Family and Community Health, Nutrition Bureau, began the BRFSS in May of 1988. The IDPH contracts with the Iowa Department of Agriculture, Statistical Division, to carry out the telephone interviewing. The interview process uses a modified random digit dialing and random selection of adults from the household. The surveys are conducted on weekends and on evenings. Ninety-nine interviews are conducted each month for a total of 1,188 interviews a year. Only adults over 18 years of age are included.

There are currently 47 states using the 65 core questions developed at the Centers for Disease Control. Each state typically adds questions and modules at the end to provide more detailed information. In Iowa, these modules include information on county of residence, smokeless tobacco use and AIDS, for a total of 78 questions.

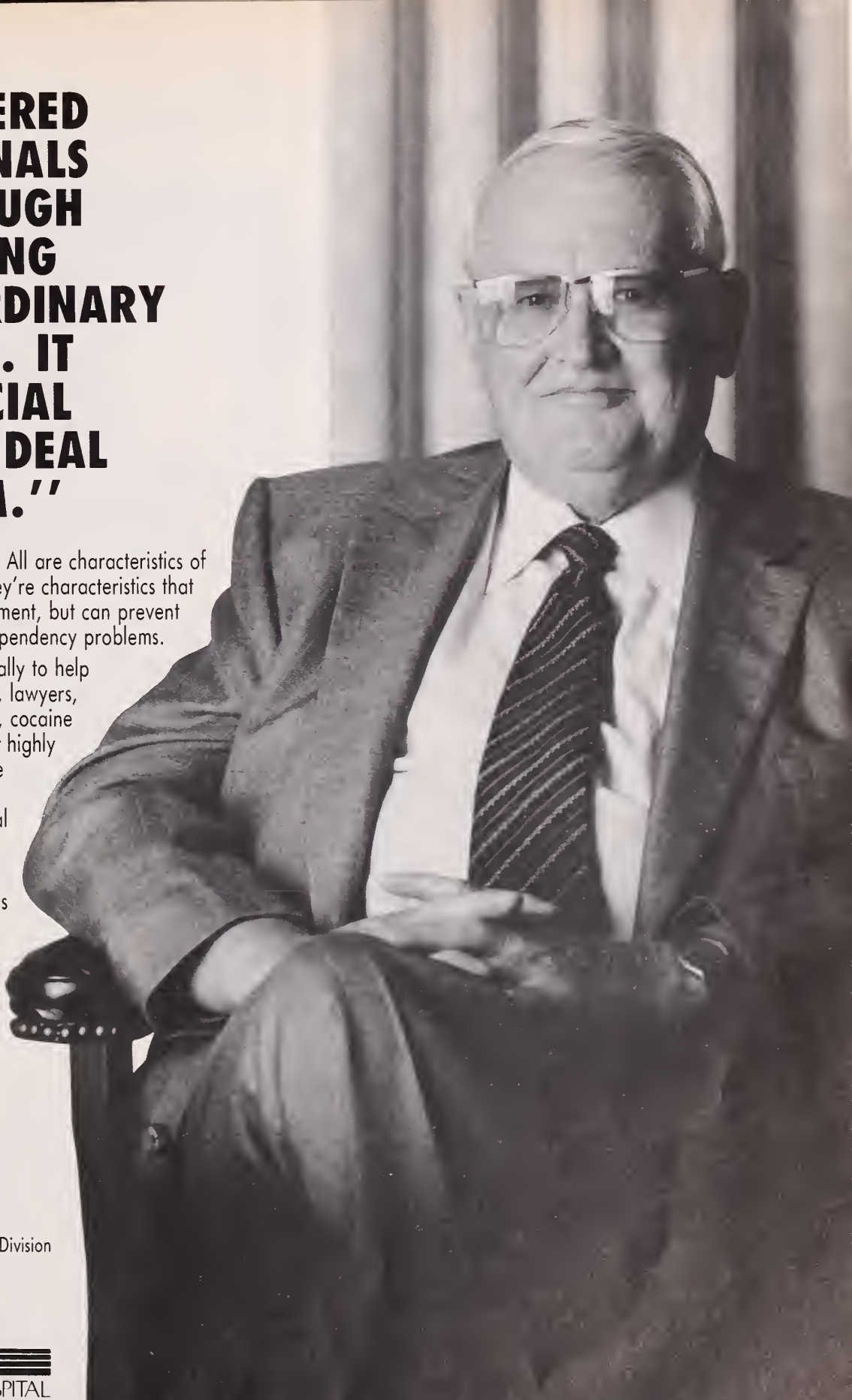
County Health Planning Initiative

The IDPH is currently overseeing a project called the County Health Planning Initiatives

(Continued page 438)

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

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Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

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Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

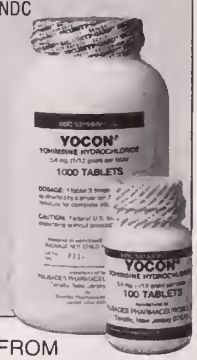
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Program. This program identifies health problems in each of the 99 counties and works on screening and education to improve the mortality or morbidity rate of the problem. The BRFSS is a complement to the Health Planning Initiative because the BRFSS data is county-specific. After a few years, the number of adults surveyed within each county will be large enough to recognize trends and, hopefully, improvements in lifestyle behaviors of Iowans.

Data summarized here was collected from May through December, 1988.

1988 Behavioral Health Risks of Iowans

- *Cholesterol* — 63.4% reported having their cholesterol checked at least once.
- *Hypertension* — 19.4% said they had been told by a doctor, nurse or other health professional they have high blood pressure.
- *Smoking* — 22.3% reported they now smoke; 42.9% of men and 60% of women reported they had never smoked.
- *Exercise* — 44.1% of those 18-64 and 30.6% of those 65 and older reported more than 20 minutes, 3 times a week of leisure time physical activity.
- *Binge or acute drinking* — 15.3% of the respondents reported having 5 or more drinks on an occasion, one or more times in the past month.
- *Seat belt use* — 76.3% of those surveyed reported using a seat belt always or nearly always.

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ROSALYN P. STERLING-SCOTT, M.D.

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RESIDENCY Boston University School of Medicine (Cardiovascular); Saint Vincent's and St. Claire's Hospitals, New York City (General Surgery)

FELLOWSHIP First Mary A. Fraley Cardiovascular Surgical Research Fellow at the Texas Heart Institute, Houston

OUTSTANDING ACHIEVEMENTS Author of numerous articles, including "Indications for Early Bypass Grafting Following Intracoronary Streptokinase"; author of "The Female Surgeon—Dawn of a New Era," chapter in *A Century of Black Surgeons—The U.S.A. Experience*; Board of Directors, Association of Black Cardiologists; Secretary, Drew Society

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Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae,* and *Streptococcus pyogenes* (group A β-hemolytic streptococci).
Contraindication: Known allergy to cephalosporins
Warnings: CECLOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS-ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions:

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea) 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever) 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.
- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.

Abnormalities in laboratory results of uncertain etiology

- Slight elevations in hepatic enzymes.
- Transient fluctuations in leukocyte count (especially in infants and children).
- Abnormal urinalysis, elevations in BUN or serum creatinine.
- Positive direct Coombs' test.
- False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clinitest® tablets but not with Tes-Tape® (glucose enzymatic test strip, Lilly). [061088L]

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U. of I. College of Medicine

TWO COLLEGE OF MEDICINE FACULTY HAVE WON appointments by the Howard Hughes Medical Institute to pursue research involving major human diseases. **John E. Donelson, Biochemistry,** and **Michael J. Welsh, Internal Medicine and Physiology,** became the first Iowans to be selected by the institute, which provides full support and equipment for at least 7 years. Donelson, from Ogden, uses genetic engineering techniques to learn how the tropical parasite that causes sleeping sickness evades the human immune system. Welsh, of Marshalltown, studies lung airway epithelia ion secretions. The Bethesda, Maryland, medical institute was created in 1953 by the late aviator-industrialist. It supports some 200 scientific investigators across the nation.

NEW FINDINGS ABOUT CYSTIC FIBROSIS were reported by a UI College of Medicine research team that includes Michael J. Welsh, Internal Medicine. They found in normal cells a specific enzyme can either stimulate or inhibit chloride secretion by lung airway epithelia, while in persons with cystic fibrosis the regulation of the chloride channels is abnormal because hormones do not open channels. However, another part of the channel is normal because it responds to the specific enzyme by closing. The failure to open and secrete results in development of the dehydrated, sticky mucus that clogs lungs and the digestive system.

X-RAY IMAGES VIA TELEPHONE LINES were found to be nearly as reliable as original x-rays and accurate enough for physicians' use in a study done in the UI family practice center. Over 5 months x-rays of some 200 patients were transmitted electronically to the UI radiation department and read by radiologists. The next day the film originals were read by other radiologists to avoid bias. The study was conducted by Edmund Franken, head of Radiology and Charles Driscoll, head of Family Practice and colleagues.

WHY A PERSON LOSES WEIGHT IS MORE IMPORTANT than how the weight is lost, and the most valuable long-term benefit to weight loss is feeling better about oneself. Those are some of the preliminary findings of an ongoing study by ***Kristi Ferguson*** *and her colleagues in the Office of Consultation and Research in Medical Education. "Many people have said that to be successful at losing weight and maintaining it, you must do it for yourself, not for other people," she says. The researchers have interviewed 122 people to learn what it takes to succeed at maintaining weight loss over time. The majority of those interviewed were women — now they would like to interview more men who have lost at least 20 pounds, have kept the weight off for at least a year and have not regained more than 5 pounds. Call 319/335-9910 for more information.*

THE SECOND HALF OF BASKETBALL GAMES AND WRESTLING PRACTICE SESSIONS appear to be the likely times for player injury in high school, according to a study by **John W. Powell, Orthopaedic Surgery.** He found 60% of basketball injuries occur in the second half and about 66% of wrestling injuries come during practice, where the most time is spent. The study also showed 22% of boys and 23% of girls in basketball incur at least one injury each year that keeps them out of play. The study was conducted by the National Athletic Trainers Association among schools with certified athletic trainers.

LUNG DISEASE FROM EXPOSURE TO ASBESTOS does not progress in all patients, and researchers in internal medicine will try to understand factors accounting for lung-function deterioration in a 5-year study just under way. About 150 study participants are sought by ***David Schwartz, Internal Medicine*** *319/356-8269. They*

This material is furnished by The University of Iowa Health News Service.

must visit the UI twice in the first year and once each in the remaining years. The researchers will also determine if there are treatments to arrest further development of the disease.

FOUR FACULTY MEMBERS SERVE ON THE 1989 TEST COMMITTEES of the National Board of Medical Examiners. They are **P. Michael Conn, Pharmacology, John E. Donelson, Biochemistry, Gerald F. DiBona, Internal Medicine** and **Richand G. Lynch, Pathology.**

FACULTY HONORS, AWARDS AND OFFICES: ***Francois Abboud, head of Internal Medicine,*** *was named president-elect of the America Heart Association;* ***Nancy Andreasen, Psychiatry,*** *was elected president of the American Psychopathological Association,* ***Carol Aschenbrener, senior associate dean,*** *was named to the Cancer Education Review Committee, National Cancer Institute;* ***Frederick C. Blodi, Ophthalmology,*** *was named vice president of the American Ophthalmological Society, vice chairman for ophthalmic heritage of the American Academy of Ophthalmology Foundation, winner of the gold medal of achievement from the University of Florence medical school and winner of the Tabor Award from the San Diego eye bank;* ***P. Michael Conn, Pharmacology,*** *received the Ernst Oppenheimer Memorial Award, highest honor of the Endocrine Society, and scientific counselor to the National Institute of Environmental Health Sciences;* ***Samuel J. Fomon, Pediatrics,*** *was named a Fellow of the American Institute of Nutrition;* ***Brian F. McCabe, Otolaryngology-head and neck surgery,*** *was given the Award of Merit, highest award of the American Otological Society;* ***W. W. Morris, associate dean emeritus,*** *received the 1989 "Leader in Aging" award from the Iowa Commission of Elder Affairs;* ***Thomas A. Weingeist, Ophthalmology,*** *was named associate secretary of the American Academy of Ophthalmology, editorial board member of* Documents Ophthalmologica, *and to the medical advisory committee of the Ophthalmic Photographers Association.*

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Medical News/Products and Programs

A BETTER WAY TO ICE MASSAGE—Sportsware West introduces a better way to ice massage: Cryocup. Literally meaning "cold" cup, the reusable, 2-piece polyethylene unit provides a reliable, convenient, cost-effective means to apply an ice massage. Its ergonomic design allows the user to enjoy the soothing benefits of ice massage without the hassles, waste and frustrations of using styrofoam or paper cups. Its contoured, cold-retardant applicator ring protects the fingers from the ice block and it gives the user complete control of the ice block. To use, simply put Cryocup together, fill with water, freeze, separate under warm running water and apply, again and again. Price includes an instruction guide. Bulk discounts are available. For more information, contact Sportsware West, 1320 Panchita Place, Santa Barbara, California 93101, 805/962-7454.

ROCHE LABORATORIES INTRODUCES NEW SINGLE VIAL PACKAGING FOR ROFERON®-A — *Roferon®-A (interferon alfa-2a, recombinant/Roche) is available in a single-vial packaging for less expensive administration in the treatment of hairy cell leukemia and AIDS-related Kaposi's sarcoma (KS). Such packaging eliminates the financial investment and storage space required with the standard 10-vial supplies. In 1988, the FDA granted Roche a license to market Roferon®-A for treatment of KS in select patients 18 years of age and older. At that time, Roche introduced its cost assistance program to reimburse patients, physicians, pharmacists or third-party payers for drug costs exceeding $9,800 per year. Without the limit the yearly cost of therapy to treat KS would range from $30,000 to $50,000. Roche has a toll-free information line, 1-800/227-7448.*

NEW PACKAGING WARNINGS — Hoffman-LaRoche has announced Accutane® capsules are available in packaging that reinforces the pregnancy warning every time a patient takes a capsule. In addition to printed warnings, illustrations of an infant with characteristic visible external deformities representing common birth defects associated with Accutane® appear on the package. This new packaging represents an advancement in Hoffmann-LaRoche's Pregnancy Prevention Program for women on Accutane®.

NEW I.V CATHETER HELPS PREVENT NEEDLESTICK INJURIES — *Protectiv™ I.V. Catheter, introduced by Critikon, Inc., a Johnson and Johnson Company, incorporates a protective needle shield that locks into place over the introducer needle as it is withdrawn from the catheter. The point is then safely and permanently encased to prevent needlestick injuries. Full national availability is expected by early 1990. For more information contact the Director of Marketing Services, Critikon, Inc., P.O. Box 22800, Tampa, Florida 33630, 1-800/237-2033.*

PARAPLEGIC DESIGNS WHEELCHAIR — A new type of power wheelchair capable of dramatically enhancing the lives of millions of disabled Americans has been designed by a Denver paraplegic whose original goal was to break the physical barriers caused by his own disability. The new motor-powered wheelchair is the first to enable those with little or no leg function to stand without assistance and move about freely in either a sitting or standing position. This stand-up feature was designed to provide important medical benefits and enhance the user's ability to function independently in the home, workplace and other environments.

Called HiRider, the device was designed by Tom Houston, a 47-year-old construction superintendent paralyzed from the waist down as a result of a 1979 construction site accident. It is being manufactured and will be marketed by RETEC USA, Inc., a subsidiary of Gaymar Industries, a leading maker of medical projects based in Orchard Park, New York. The wheelchair is expected to be available through medical distributors in mid-1989.

(Continued next page)

Recent Books

The National Rural Health Association sponsored a conference in December 1987 to establish a national rural health research agenda. This conference, mandated by the U.S. Congress, is summarized in a special issue of *Health Services Research*, vol. 23, no. 5, February 1989. The conference set about to summarize existing research on key health care issues in rural America, identify gaps in knowledge and develop an agenda for rural health services research. The report presents concerns about the changing rural environment; elderly, maternal, child and adolescent care; alternate delivery systems; hospitals and primary health care as well as concerns for the poor and uninsured. This conference faced the dilemma of how little is known of some aspects of rural health care and the problems of future research and action to insure a good future for the health of this population. Copies of the report may be ordered from the National Rural Health Association, 301 E. Armour Blvd., Suite 420, Kansas City, Missouri 64111. The price is $20.00 for NRHA members, $25.00 for nonmembers.

The Business Side of Medical Practice, Department of Practice Development Resources, American Medical Association, Chicago, Illinois 60610. The chapter headings of this book indicate the value of the contents: 1) Deciding how to practice; 2) Selecting the place to practice; 3) Setting up your office; 4) Financing an office; 5) Clearing legal hurdles and securing professional assistance; 6) What insurance a doctor should carry; 7) An efficient medical office; 8) Running the business side of a practice; 9) Billing and collections; 10) Personnel in a medical practice; 11) Financial planning; and further sources of information. The information is basic and thought-provoking. Today the practice of medicine is big business whether we wish to admit it or not. Medical education is lax in preparing the neophyte physician for office operations. From an elder physician to a younger one — let the AMA assist you in formulating your plans for entering the practice of medicine. This book and other sources of information and assistance from the AMA will be invaluable to you.



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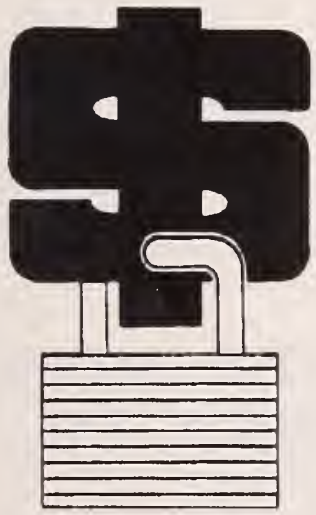
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About Iowa Physicians

Dr. David Youberg has retired after 22 years of medical practice at Medical Associates, P.C. clinics in Sac City, Lake View, Early and Newell. Dr. Youberg received the M.D. degree from the University of Colorado School of Medicine, Denver, Colorado. **Dr. David L. Kapaska** has replaced Dr. Youberg. Dr. Kapaska received the D.O. degree from the University of Osteopathic Medicine and Health Sciences, Des Moines and served his family practice residency at Iowa Lutheran Hospital, also in Des Moines. **Dr. Mary Mueller** has joined **Dr. Steven Hanas** at DeWitt Family Medical Center. Dr. Mueller received the M.D. degree from the U. of I. College of Medicine and completed the Davenport Family Practice Residency Program. **Dr. William Z. Ramirez** has joined the Des Moines Medical Group. Dr. Ramirez received the M.D. degree from Autonomous University in Monterrey, Mexico and served his internal medicine residency at St. Francis Hospital in Evanston, Illinois. **Dr. James Gannon** has retired after 35 years of medical practice in Laurens. Dr. Gannon received the M.D. degree from the U. of I. College of Medicine and served an internship at Kansas City General Hospital, Kansas City, Missouri. **Dr. Meryl A. Severson,** an obstetrician/gynecologist with Park Clinic in Mason City, has been named medical examiner for Cerro Gordo County. Dr. Severson was deputy medical examiner for the past 3 years. **Dr. Robert Kretzschmar,** Iowa City gynecologist, was awarded the first Outstanding Service Award by the Johnson County

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Unit of the American Cancer Society for his 25 years of service to the organization. **Dr. Glendon Button,** Conrad family practitioner, recently received the McPherson College Citation of Merit at the Alumni Banquet and Awards Ceremony. Criteria for the award are based on achievement and success in one's profession, service to humankind, service to one's church and support of McPherson College. **Dr. David Schrodt** has joined the Park Clinic at Hampton and Allison. Dr. Schrodt received the M.D. degree from the Univerity of Missouri School of Medicine, Kansas City, Missouri and served his internship in Milwaukee, Wisconsin. Prior to joining the clinic, Dr. Schrodt had been in practice in Bethany, Illinois. **Dr. Richard Francis,** a surgeon who joined the Park Clinic staff in 1988, recently resigned. **Dr. Phillip D. Brooks** has joined Grinnell General Hospital as a staff radiologist. Dr. Brooks received the M.D. degree from Wayne State University School of Medicine, Detroit, Michigan. **Dr. Patrick Ryal** has begun practice in Nora Springs. Dr. Ryal previously was the Associate Director of Family Practice at Mercy Hospital in Mason City.

Deaths

Dr. Charles B. Carignan, Jr., 61, Spirit Lake, died July 16 at Dickinson County Memorial Hospital. Dr. Carignan received the M.D. degree from Creighton University School of Medicine, Omaha, Nebraska and interned at Nebraska Methodist Hospital, Omaha, Nebraska. Prior to locating in Spirit Lake in 1974, Dr. Carignan practiced in Elm Creek and Ravenna, Nebraska.

Dr. J. Fred Throckmorton, 89, Des Moines, died July 16 at Iowa Methodist Medical Center. Dr. Throckmorton received the M.D. degree from the U. of I. College of Medicine and practiced at Mercy Hospital Medical Center until his retirement in 1975. He was a member of the International College of Physicians and Surgeons and a life member of the Iowa Medical Society.



CORRECTION

The gentleman Dr. Daniel Youngblade is greeting in the above photo, taken at the 1989 annual meeting, was incorrectly identified in the July issue of *IOWA MEDICINE.* The physician is William P. Davey, M.D., Sioux City.

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MANKATO CLINIC, LTD — is seeking BE/BC physician in the following specialties: allergy, dermatology, family practice, invasive cardiology, oncology, urology, ophthalmology, occupational/emergency medicine, pulmonology, general vacular surgery and general internal medicine. The Mankato Clinic is a 40-doctor multi-specialty group practice in south central Minnesota with a trade area population of 150,000. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Roger Greenwald, Administrator or Dr. B.C. McGregor at 507/625-1811 or write 501 Holly Lane, Mankato, Minnesota 56001.

ORTHOPEDIC SURGEONS, WISCONSIN — Marshfield Clinic, a multispecialty group practice with over 300 physicians, is seeking BE/BC orthopedic surgeons to join expanding regional centers. Positions available in 2 locations. One in northwestern Wisconsin within 90 miles of Minneapolis and one, a group practice of 25 physicians, in northcentral Wisconsin approximately 1½ hours from Lake Superior. Communities offer exceptional recreational, cultural and educational opportunities. Compensation package with starting salary up to $149,100 combined with outstanding fringe benefit package totals in excess of $200,000. There is no buy-in or start-up expense. Send CV and references to David L. Draves, Director, Regional Development, 1000 North Oak Avenue, Marshfield, Wisconsin 54449 or call collect 715/387-5376.

PRACTICE OPPORTUNITY — Neurologist, orthopaedist, neurosurgeon, anesthesiologist or general practitioner interested in treating pain, needed as associate in well-established Midwest Neurosurgical Practice/Pain Center treating acute and chronic headache and pain. An opportunity to buy practice; drawing area of 300,000. 8,000 sq. ft. new clinic building just across from Marian Health Center. If interested please call 1-800/383-PAIN or 712/252-4386 or send resume to Headache and Pain Control Center, P.C., 700 Jennings Street, Sioux City, Iowa 51105.

McCRARY-ROST CLINIC, P.C. — Seeking a family physician to practice with David R. Archer, M.D. in the Gowrie, Iowa office. The group includes 9 family physicians, 1 general internist, 2 general surgeons with an environment to practice quality medicine, balanced with a high quality of life. New building, call every tenth night with adequate time off for family and other interests. For more information contact David R. Archer, M.D. at 515/352-3891 or Ed Maahs, Administrator at 800/262-6230.

GENERAL INTERNIST — Marshfield Clinic, a multispecialty group practice with over 300 physicians, is seeking BE/BC general internist to join expanding regional centers. Practice opportunities range in size from multispecialty groups of 11 to 25. Positions available in 3 locations. One in northwestern Wisconsin, 90 miles from Minneapolis; one in northcentral Wisconsin in close proximity to the U. P. of Michigan and Lake Superior and one in central Wisconsin within 35 miles of Marshfield. Full specialty consultation readily available. Positions offer strong economic stability combined with exceptional recreational, cultural and educational opportunities. Starting salary up to $89,400 with salary in 2 years up to $113,100. Fringe benefit package is outstanding. Send CV and references to David L. Draves, Director, Regional Development, 1000 North Oak Avenue, Marshfield, Wisconsin 54449 or call collect 715/387-5376.

FAMILY PRACTICE — Marshfield Clinic, a multispecialty group practice with over 300 physicians, is seeking BE/BC family practitioners to join expanding regional centers. Practice opportunities range in size from single specialty groups of 3 to multispecialty groups of 25. Positions available in 6 locations. Two in northwestern Wisconsin within 70 and 90 miles from Minneapolis; 2 in northcentral Wisconsin within 80 and 90 miles of Lake Superior and 2 in central Wisconsin within 25 and 35 miles of Marshfield. Full specialty consultation readily available. Positions offer strong economic stability combined with exceptional recreational, cultural and educational opportunities. Starting salary up to $89,400 with salary in 2 years up to $113,100. Fringe benefit package is outstanding. Send CV and references to David L. Draves, Director, Regional Development, 1000 North Oak Avenue, Marshfield, Wisconsin 54449 or call collect 715/387-5376.

FAMILY PHYSICIAN NEEDED — Academic department of family practice is recruiting Board Certified family physicians to join the full-time faculty of its well-established 24-resident program. Responsibilities include teaching, research and patient care. Residency training and previous experience in these areas is highly desirable, as well as obstetrics skills. Located in a midwestern/Big Ten medical, recreational and cultural center of excellence. Level and type of appointment commensurate with credentials of applicant. Send CV to Charles E. Driscoll, M.D., Professor and Head, Department of Family Practice, University of Iowa College of Medicine, 2149 Steindler Building, Iowa City, Iowa 52242. Women and minorities are encouraged to apply. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.

PEDIATRICIAN, BE/BC — Director needed for pediatrics department at Broadlawns Medical Center, Des Moines. This county hospital has an active ER, acute care pediatrics and a family residency program. Good possibility of University of Iowa faculty appointment. Send CV to BMC, 18th and Hickman Road, Des Moines, Iowa 50314 or call 515/282-2319.

FAMILY PHYSICIAN — Busy, rewarding 2-doctor practice in central Virginia. Beautiful, friendly rural setting close to urban amenities. Virginia offers the ocean, mountains, Washington, D.C. and a great economy. For more information, call Al Southall, M.D., A.B.F.P., Louisa Family Practice, Louisa, Virginia at 703/967-2202.

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FAMILY PRACTICE PHYSICIAN NEEDED — Group of 3 Board Certified family physicians seeking a 4th family practice physician. County seat town, rural northwest Iowa. Adjacent, fiscally-sound hospital. Excellent compensation package. For further information, contact Scott R. Helmers, M.D., Family Medicine Clinic, 115 Cedar Lane, Sibley, Iowa 51249 or call 712/754-3658.

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Keeping Hearts Healthy

As a physician, you are respected. Patients take your advice seriously. Studies consistently show that patients are most likely to make positive lifestyle changes when their personal physician recommends them.

SO READS THE OPENING STATEMENT in a brochure distributed by the American Heart Association, Iowa Affiliate regarding a program designed to educate physicians and patients on the dangers of high cholesterol.

"The Heart Association is not just in business to reach the lay public," explains Bob Schultz, program director at the AHA Iowa Affiliate. "Because we don't have one-on-one capabilities, we have to enlist the help of physicians. They are our spokespersons."

Schultz says there has been an increased interest in cholesterol as "a new science" which has emerged during the past few years. The role of cholesterol in coronary disease has recently caught the attention of the media, creating an unprecedented public demand for information on the subject.

The Heart Association's Iowa Affiliate has an extensive library of materials on healthy heart maintenance, materials geared both toward physicians and patients. The office is organizing a speakers' bureau to make presentations on cholesterol to service organizations and civic groups. Physicians will be numbered among these speakers.

Through the Heart Association, physicians are also involved in cholesterol screenings which take place in hospitals across Iowa. Patients with unacceptable cholesterol levels who are identified in the screenings are referred to their family physicians for further testing and possible treatment.

Currently, the AHA's Iowa Affiliate is promoting several programs of value to physicians. One, called "Physicians' Cholesterol Education Program," is a packet of information designed to assist physicians in lowering their patients' serum cholesterol levels. The packet contains a cholesterol tracking chart, a pamphlet outlining the AHA diet, a physician's cholesterol education handbook, a pamphlet on dietary treatment of hypercholesterolemia and a list of supplemental patient education materials.

The AHA will provide speakers to present one hour Physician's Cholesterol Education programs to hospitals interested in providing continuing education in the diagnosis and treatment of hypercholesterolemia.

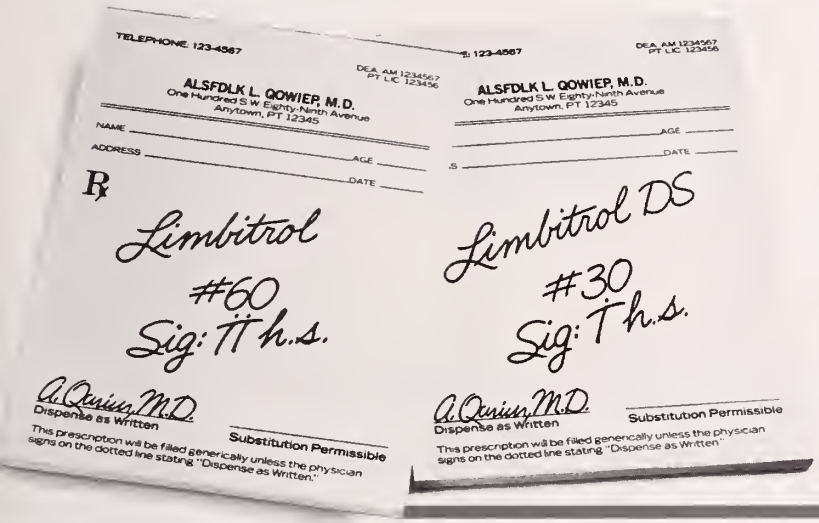
A new AHA patient education program is "Heart Rx." This self-contained packet, which has 4 modules with 3 implementation levels, contains all materials needed to educate patients on lifestyle-related cardiac risk factors, says the AHA. The program covers nutrition and diet modification, high blood pressure control, smoking cessation and early warning signs of heart attack and stroke.

And, in addition to its other activities, the AHA Iowa Affiliate has funded $1.3 million of research at the University of Iowa and Iowa State University.

It's obvious the AHA is committed to working with physicians toward a common goal, a fact which is stated well in a recent AHA brochure for physicians: "At the American Heart Association we want the same things you do — to save lives and prevent the onset of cardiovascular disease."

In moderate depression and anxiety

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week improvement in somatic symptoms[1]
- 50% greater improvement with Limbitrol in the first week than with amitriptyline alone[2]



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Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) Ⓥ

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References: **1.** Data on file, Hoffmann-La Roche Inc., Nutley, NJ. **2.** Feighner JP, *et al: Psychopharmacology 61:*217-225, Mar 22, 1979.

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Tranquilizer—Antidepressant
Before prescribing, please consult complete product information, a summary of which follows:
Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.
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Usage in Pregnancy: **Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.**
Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).
Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.
Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.
Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: *Cardiovascular:* Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. *Psychiatric:* Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. *Neurologic:* Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. *Anticholinergic:* Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. *Allergic:* Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. *Hematologic:* Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. *Gastrointestinal:* Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. *Endocrine:* Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. *Other:* Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.
Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.
Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.
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In the depressed and anxious patient

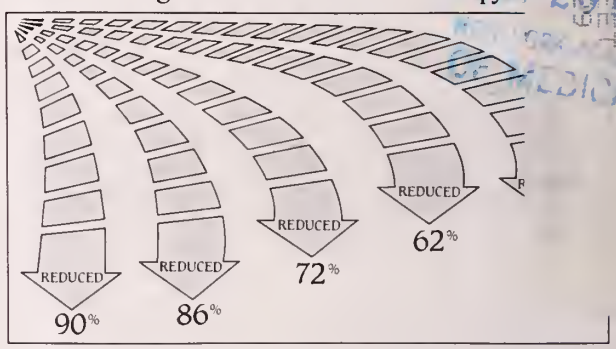
See Improvement In The First Week...[1]

And The Weeks That Follow

- 74% of patients experienced improved sleep after the first *h.s.* dose[1]
- First-week reduction in somatic symptoms[1]

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Percentage of Reduction in Individual Somatic Sy During First Week of Limbitrol Therapy*



*Patients often presented with more than one somatic symptom.

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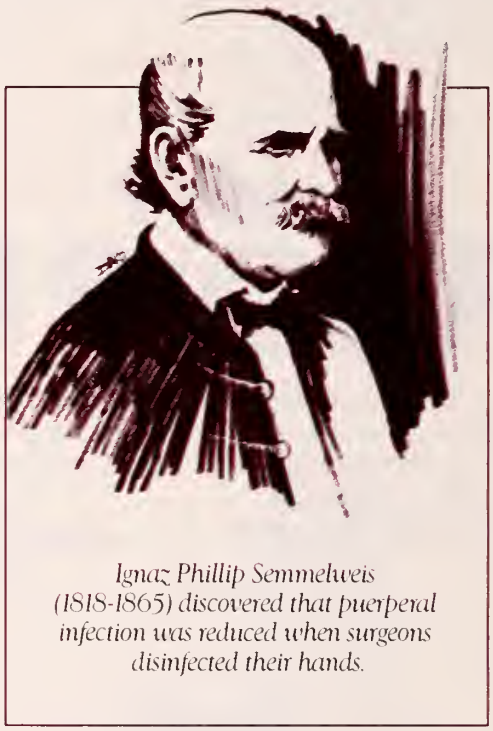
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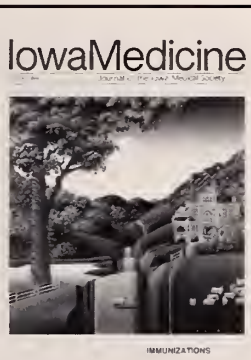
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"Seven Sisters Road," a painting by Iowa artist Jim Buckels, takes its inspiration from a country road near Iowa City. A native of Boone, Buckels began his career as a commercial illustrator and is gaining fame as an artist of limited edition prints. His work can be found in galleries around the world. In Des Moines, his prints are handled by Heartland Galleries.

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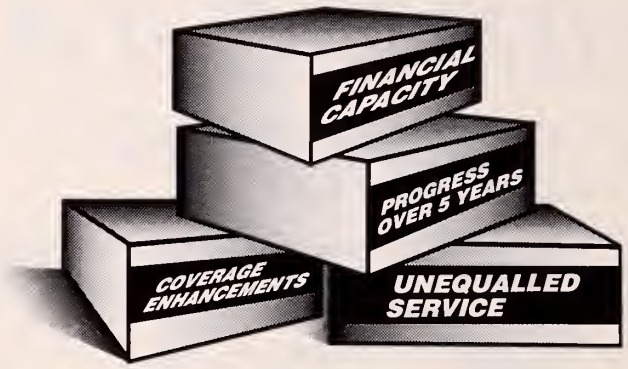
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Donald F. Rodawig, M.D.

President's Privilege



It's Here to Stay

LONG AGO AND FAR AWAY, there was a small country where everyone lived happily until one day when it began raining. Day after day, the rains came and the sun rarely appeared. Frightened, the people sought the advice of a very old, very wise man. "The rains will not stop and our homes and crops are flooding!" they cried. "What shall we do?" The old man thought for a long time, stroking his long grey beard. Finally, he looked at them and said, "Learn to live under water."

Just like the relentless rains in this parable, peer review is here to stay. Though many physicians resent it as an arbitrary intrusion into the doctor-patient relationship, the federal government is committed to peer review as a way of ensuring cost-effective health care delivery.

I doubt there are many practicing Iowa physicians who haven't had some sort of confrontation with the Iowa Foundation for Medical Care, Iowa's peer review organization. During the course of my IMS presidency, I have heard a number of complaints about peer review and the IFMC.

I empathize with physicians who feel they can deliver quality, cost-efficient health care without a PRO reviewing their treatment decisions. I empathize with physicians who feel the reviewers are sometimes insensitive in making decisions without benefit of seeing the patient. However, I also suspect I am practicing better because my documentation and reasoning could be scrutinized at any moment.

Much as I empathize, I feel strongly that lamenting about peer review and our PRO is only wheel-spinning. We could better direct our efforts toward working with the IFMC to make sure the peer review process is as fair as possible to patients and physicians.

I urge you to take advantage of every opportunity for input into the peer review process. The IFMC has a Provider Advisory Committee and the IMS is represented on the committee. If you have concerns or problems with the IFMC, don't complain in private. Convey your concerns to Dr. Dennis Walter, Dr. Donald Soll or Dr. William Franey. They will make sure the committee hears about them.

Recently, the IFMC established education programs to be conducted quarterly at sites across Iowa. Notice of these meetings will appear in the *IMS UPDATE*. If there is a Medicare topic you wish to discuss, you may submit it to the IFMC 2 weeks in advance of the meeting in your area.

I believe we owe our patients and colleagues a responsibility to shape the future of peer review in Iowa. We have no choice but to fulfill this responsibility. We may not prefer living under water, but I believe we can do it.

Donald F Rodawig MD

Donald F. Rodawig, M.D.
President

Immunization Needs Of Adults

JOHN OLDS, M.D.
Des Moines, Iowa

People at risk for vaccine preventable diseases are generally under-immunized. Primary care physicians too often miss opportunities to provide indicated immunizations to their patients. This paper reviews the indications and certain aspects of adult immunizations for influenza, pneumococcus, hepatitis B, tetanus/diphtheria, measles and rubella.

An ounce of prevention is worth a pound of cure.
— Benjamin Franklin

IN THE FALL, DEFENSE-MINDED football coaches think of safety blitzes, while defense minded basketball coaches think of forecourt traps. Fall is also the time defense-minded physicians should be thinking of immunizations. We should, of course, try to prevent disease year round, but with flu season around the corner, this is an opportune time for a full court press to immunize those at risk. As Louis Pasteur said, not quite as succinctly as Franklin, "When meditating over a disease, I never think of finding a remedy for it, but, instead, a means of preventing it."

A comprehensive review of adult immunizations is beyond the scope of this paper. Those interested in further detail are referred to *Guide for Adult Immunization, Adult Immunization* and *General Recommendations on Immunization*.[1-3] This paper focuses on more commonly needed immunizations such as influenza, pneumococcus and tetanus/diphtheria.

Citing data from a 1988 CDC study, David S. Fedsen, M.D. of the University of Virginia School of Medicine points an accusing finger at the primary care physician. The study revealed that 87% of elderly patients with a positive attitude about vaccination were immunized for influenza if their physician so recommended; only 8% were immunized if their physician failed to recommend immunization. Pneumococcal vaccination rates were similar. Dr. Fedsen placed much of the blame for low immunization rates on physicians for failure to advise their patients of the need.[4]

Missed Opportunities

Williams et al in a 1988 report reviewed the efficacy, recommended utilization, missed opportunities for vaccination and recommendations for improving vaccine utilization for influenza, pneumococcus, hepatitis B, tetanus/diphtheria, measles and rubella.[5] They observed that numerous opportunities are missed to immunize adults. For example, only 15-30% of high risk persons belonging to one health maintenance organization received influenza vaccine even though immu-

Dr. Olds in an internist specializing in infectious diseases. He is clinical assistant professor, Department of Internal Medicine, University of Iowa College of Medicine.

TABLE 1

IMMUNIZATIONS RECOMMENDED FOR ADULTS 18 YEARS OF AGE AND OLDER*

Immunobiologic	*Major Indications*	*Major Precautions*
Influenza vaccine	Adults with high-risk conditions, residents of nursing homes or other chronic care facilities, medical care personnel, healthy persons age 65 years or older	History of anaphylactic hypersensitivity to egg ingestion
Pneumococcal polysaccharide vaccine (23-valent)	Adults who are at increased risk of pneumococcal disease and its complications because of underlying health conditions; healthy older adults, especially those age 65 years or older	Vaccine safety in pregnant women has not been evaluated; revaccination is not recommended
Hepatitis B vaccine	Adults at increased risk of occupational, environmental, social, or family exposure to hepatitis B	Pregnancy should not be considered a contraindication if the woman is otherwise eligible
Tetanus/diphtheria toxoid	All adults at mid-decade ages	History of a neurologic or hypersensitivity reaction after a previous dose
Measles vaccine	Adults born after 1956 without verification of live measles vaccine on or after first birthday, physician-diagnosed measles or laboratory evidence of immunity; susceptible travelers to foreign countries	Pregnancy; history of anaphylactic reaction following egg ingestion or receipt of neomycin; immunosuppression
Rubella vaccine	Adults without verification of live vaccine on or after first birthday or laboratory evidence of immunity; susceptible travelers to foreign countries	Pregnancy; history of anaphylactic reaction following receipt of neomycin; immunosuppression

*Reproduced with permission from *Annals of Internal Medicine* and WW Williams et al.

nizations were given at no cost to the patient.

Missed opportunities for vaccination include routine office visits for physical exams or specific problems, patients in hospitals or nursing homes and even patients presenting to emergency rooms for trauma. They conclude that adult immunization can reduce the "incidence, morbidity and mortality of vaccine-preventable disease" and recommend programs be established in hospitals, clinics, HMOs and office practices that "systematically offer recommended vaccines to adults."

Specific Recommendations

Table 1 from Williams et al lists indications and major contraindications for common vaccines for adults 18 years or older.[5] The following comments regarding the indications for each of the vaccines are based on official recommendations, unless otherwise noted.

Influenza — High risk conditions as indications for influenza vaccine include chronic disorders of the cardiovascular or pulmonary systems severe enough to require regular medical follow-up or to have caused hospitalization during the preceding year, diabetes mellitus, renal dysfunction, anemia or immunosuppression. Medical care personnel include physicians, nurses and other personnel in both hospital and outpatient care settings who have extensive contact with high risk patients. Influenza vaccine is administered yearly in the late fall or early winter.

Pneumococcus — High risk conditions indicating a need for pneumococcal vaccine include chronic illnesses such as cardiovascular disease and chronic pulmonary disease, splenic dysfunction or anatomic asplenia, Hodgkin's disease, multiple myeloma, cirrhosis, alcoholism, renal failure, CSF leaks and conditions associated with immunosuppression. Since immunocompetence may

(Continued next page)

begin to wane in the 6th decade, some authorities recommend pneumococcal vaccination be given to adults 55 years and older.

Pneumococcal vaccine is given once and need not be repeated except in unusual circumstances. Persons previously immunized with the 14 valent vaccine should not generally be reimmunized with the 23 valent vaccine. Pneumococcal vaccine may be given simultaneously with influenza vaccine, but at a separate injection site.

'Missed opportunities for vaccination include routine office visits . . .'

Hepatitis B — Persons at high risk for acquiring hepatitis B include homosexual males, users of illicit injectable drugs, household and sexual contacts of HBV carriers, workers in health-related occupations requiring frequent exposure to blood, residents and staff of institutions for the mentally retarded, hemodialysis patients, recipients of factor VIII or IX concentrates and morticians and their assistants. There is no risk of transmitting HIV with hepatitis B vaccine.

Tetanus/diphtheria — Tetanus/diptheria is given every 10 years to maintain immunity. However, if a person sustains a high risk injury (such as a puncture wound from a nail in a barnyard or an animal bite) and was immunized over 5 years previously, reimmunization is indicated at the time of injury.

Measles — Measles vaccine heretofore was recommended once at 15 months of age. Due to recent evidence for vaccine failures resulting in an increasing incidence of clinical measles in young adults, the American Academy of Pediatrics now officially recommends revaccination (with measles/mumps/rubella vaccine) when a child enters middle school. For those beyond middle school, measles vaccine (as MMR) should be given when the opportunity is at hand, up through and including entry into college. Health care workers born after 1956 who received only one MMR should be reimmunized against measles.

Rubella — A patient's or physician's history of clinical rubella is not considered adequate documentation of rubella immunity. Adults who work in hospital settings, whether volunteers, paid staff or medical staff, should document rubella immunity to avoid the risk of acquiring and transmitting rubella to immunosuppressed patients or to patients with no prior exposure.

Conclusion

William J. Mayo observed in 1928, "The aim of medicine is to prevent disease and prolong life, the ideal of medicine is to eliminate the need of a physician." Through immunization programs such as recommended by Williams et al we can, and should try, to prevent disease and prolong life.[5]

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1. *Guide for Adult Immunization*, American College of Physicians, 1985.
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Dennis Walter, M.D.

Questions and Answers



A Message For Iowa's Elderly

The author, chairman of the Medicare Partners Review Committee, discusses this important IMS program on the occasion of its first anniversary. In a sidebar feature, Greg Anliker, vice-chairman of the committee and executive director of the Northwest Aging Association, comments on the program from the perspective of the Iowa Association of Area Agencies on Aging.

How was the Medicare Partners program started?

Kathryn Opheim, M.D. of Sioux City was the first physician to show a real interest in the program. She realized it is important for Iowa's elderly patients to know medical care is available to them. Dr. Opheim presented a plan to the IMS Board of Trustees, who gave her the go ahead because they believed the program was vital to making medical care more accessible to the elderly.

Dr. Youngblade and Dr. Boldus supported Dr. Opheim and they all received excellent assistance from Rick Motz, director of the Area Agency on Aging in Sioux City. Pilot projects were started in Sioux City and later in Polk County.

How important was and is the cooperation of the Iowa Association of Area Agencies on Aging?

The help and cooperation of the IAAAA has been vital to the program's success. The relationship between the IMS and the IAAAA is mutually supportive and progressive. The Medicare Partners Review Committee is one of the most unified committees I have worked with. This committee will be essential in maintaining the program.

What are the positives and negatives of the program so far? How has it helped physicians and patients?

Good will and trust have been established between elderly patients and Iowa physicians, and a cooperative spirit has developed between the IMS and the IAAAA. Medical care has been made more accessible for lower income elderly Iowans. Another positive is the fact that a program such as this one can be successful on a voluntary basis and doesn't have to be legislated.

The only negatives I am aware of have been problems associated with misunderstandings regarding the purpose and mechanics of the program. These problems have been handled by the IMS and the IAAAA working together.

Why is it important to maintain Medicare Partners as a vital component of the IMS agenda?

Medicare Partners must be maintained because of the faith and trust which is developing between Iowa physicians and their elderly patients. Through this program, Iowa physicians are telling the elderly, 'We will not forsake you.' The program has demonstrated that a voluntary effort can work.

Open Doors Solve Problems



GREG ANLIKER
Spencer, Iowa

AFFORDABLE AND ACCESSIBLE HEALTH CARE for the elderly, increasing health care costs, mandatory Medicare assignment, balance billing, burdensome paperwork and unreasonable Medicare reimbursements. Any one of these issues provides ample opportunity for debate and divisiveness between physicians and advocates for the elderly.

However, the Iowa Association of Area Agencies on Aging (I4A) and the Iowa Medical Society decided to concentrate on mutual concerns and goals on behalf of elderly patients. The result is Medicare Partners.

While Medicare Partners has not completely eliminated the major issues, it has eased affordability and accessibility problems for large numbers of elderly Iowans. The program has offered Iowa's medical community an opportunity to easily identify those in need of special consideration and has dramatically reduced pressure for mandatory Medicare assignment.

As a partner in Medicare Partners, the I4A has issued over 11,000 patient cards to eligible Iowans. Considering Medicare's complexities, we've had relatively few problems. There have been the inevitable misunderstandings by patients who thought the program would waive the 20% copayment and deductibles. Several area agency offices have received bills from hospitals and physician offices whose staff thought Medicare Partners was an insurance program.

Just as the IMS has received some criticism internally and externally for its involvement in Medicare Partners, so has the I4A.

'While Medicare Partners has not completely eliminated the major issues, it has eased affordability and accessibility problems for large numbers of elderly Iowans.'

There are many advocates for the elderly who insist upon nothing less than assignment for all Medicare beneficiaries. Wisely, rather than waste time debating this issue, the IMS and I4A, as well as all of the physicians who participate in the program, have put their energies into reducing some of the negative side effects for over 11,000 elderly patients needing financial help with health care costs.

Medicare Partners has offered peace of mind to many people. In the words of an enrollee who recently lost her husband to cancer, "Medicare Partners really helped us a lot. If we hadn't had Medicare Partners, it would have taken every cent we had. But, the most important thing was that my husband was cared for and really had good care."

Despite minor problems and frustrations, when we focus on the purposes of the program and listen to the thousands of people who benefit, there is no question the program is a major success. The I4A would like to see many more elders utilizing the program and we will continue to promote it vigorously. I4A expects slow but continuous growth in the number of people who are issued cards.

Also important is the fact we have opened the doors of communication. This may allow us to work together to resolve other problems such as low Medicare and Medicaid reimbursement in rural states and overwhelming paperwork burdens. These types of problems directly effect cost and accessibility of health services and, in general, quality of life in Iowa.

IMS PRIME UPDATE



Several recent events make the Iowa Medical Society's Prime Financial Benefit Trust an even better tax-deductible savings program:

1. **HIGHER CASH ACCUMULATION**
 The ratio of death benefit to cash in the Trust has been reduced. Under the new guidelines, a doctor 45 to 50 years old would have a benefit **31 to 45% higher** at a normal retirement date.
2. **MINIMUM DEATH BENEFIT LOWERED**
 From $50,000 to $25,000 resulting in LOWER costs to ancillary employees and HIGHER allocations for physicians.
3. **TAX COURT OPINION**
 On March 30, 1989, a Federal Tax Court concluded that a similar Trust was allowed a full deduction under code section 162. Copies are available for review by personal tax advisors.

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5. Lump sum withdrawals can be made anytime **before** age 59 1/2 **without** IRS penalty.

The trust is used for funding "early retirement" and "malpractice tail premiums", as well as, for facilitating tax and estate planning.

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Historical Vignette

No Time for Complacency

Vivid memories of past experiences with infectious diseases were stirred by the planning and preparation of this issue of *IOWA MEDICINE.* The continuing battle against the reemergence of epidemics of contagious diseases is a mainstay in preventive medicine. Before the development of immunization agents the epidemics flourished with high morbidity and mortality tolls.

My first contact with the devastating poliomyelitis epidemics was as a medical student in 1946. Several of us were employed by the county hospital in Omaha to apply the hot, wet woolen packs to the painful, spastic and sometimes paralyzed extremities. The odor of hot wet wool permeated the hospital. In 1948 I began my internship and pediatrics residency in Des Moines, entering again into an epidemic of poliomyelitis.

In 1952 we admitted 609 patients to Raymond Blank Hospital for Children. The peak months were August (208 cases) and September (213 cases). Most patients (513) were between the ages of 1 and 11. The hot (no air conditioning then) wards resounded with the monotonous "whoosh-push" of the giant bellows of the mechanical respirators ("iron lungs") and the "slurping" of the suction machines in attempts to clear the airways of the bulbar victims.

The cries of the children still haunt me. They were lonely, frightened and in pain. Strict isolation was the rule; parents and family had to visit children through the open windows. Extension ladders were utilized many times to reach patients on the second floor of the hospital.

We knew nothing of the spread of the poliomyelitis virus. Vector animals (even dogs and cats) were suspect. Swimming pools were closed. Large public gatherings were shunned. The annual baby contest of the Iowa State Fair was cancelled.

Treatment modalities were controversial as well. The hot, wet woolen packs of the Kenny approach were directed toward relief of the painful muscle spasms. Mattresses were shortened to provide foot space over the end when the patient was in the prone position, the feet placed flat against a board at the end of the bed to maintain proper position. Splints and braces were fitted to the patients with permanent paralysis. Of course, the overwhelming concern was for patients with respiratory and swallowing paralysis. The timing of respirator use, decisions regarding the need for tracheotomy, the continuous need for evacuation of secretions from the pharynx and the respiratory tract were paramount. In addition there were concerns regarding the provision of supportive fluids and nutrition.

'Pertussis, first described in France in 1578, has a long history of devastation upon young infants. Swedish reports indicate from 1749-1764, 43,393 infants died of whooping cough.'

My second year of residency was interrupted by 2 years active duty with the Navy during the Korean Conflict — a respite from poliomyelitis. But, when I returned in 1952 the problem had worsened. There were 3,564 reported cases of poliomyelitis in Iowa in 1952, 870 in the Sioux City area.

April 1955: the tide turned. Salk vaccine became available. The vaccine was in short supply, and there were frantic efforts to obtain enough of the vaccine. Untoward incidences added to the drama. We compiled lists of patients in the order they inquired and provided injections of Salk vaccine as it became available. Children had first priority, but there were incidents of adults offering bribes to receive vaccine for themselves. The epidemic was conquered, but not forever as the vaccine did not confer life-long immunity. In 1962 live virus vaccines developed by Sabin were introduced. Poliomyelitis epidemics became history. The use of vaccines has not been void of problems, but that is another story.

Another disease which brings back vivid memories is measles. Small children developed serious complications from measles.

(Continued next page)

Chronic otitis media, pneumonia and encephalitis were major problems. We did not have a wide range of antibiotics, so bacterial complications took their toll as well.

In 1962 I was fortunate to be involved with field trials of the experimental Edmonton strain of vaccine produced by Merck, Sharp and Dohme. I was allocated 30 doses. The vaccine was given in conjunction with gamma globulin. Side effects were more marked than we see with the further attenuated vaccine we have today. It was interesting to be involved in the early use of measles vaccine and to share information with the researchers of the product.

Unfortunately, some areas of the U.S. have seen a resurgence of measles. There have been studies to determine the optimum age for the initial vaccination, the need for repeat injections and the problems of mass immunization. Recently it has been recommended that children receive a repeat injection upon entering junior high.

Rubella vaccine has greatly reduced the incidence of the congenital rubella syndrome. In the 1964 epidemic of rubella in the U.S., 20,000 infants were affected by the teratogenic effects of maternal rubella. Those unfortunate infants suffered cardiac abnormalities, cataracts, microcephaly, bone lesions as well as prematurity. Rubella vaccine, now given in combination with measles and mumps vaccines (MMR), has proven its worth.

One last disease bears comment. It is pathetic to observe a small infant coughing uncontrollably with hardly a chance to breathe, finally getting a breath of air with a mighty whoop. Pertussis, first described in France in 1578, has a long history of devastation upon young infants. Swedish reports indicate from 1749-1764, 43,393 infants died of whooping cough. During my pediatrics residency I observed several infants with severe pertussis. Complications include bleeding into the skin, mucous membranes and the brain, or pneumonia, pulmonary emphysema and asphyxia. Pertussis vaccine has been the subject of considerable controversy in recent years but is still the best we have to prevent the disease.

I have never seen small pox or diphtheria; and I hope I never again see poliomyelitis, measles or pertussis. However, we should never be complacent about these contagious diseases. We should continuously educate ourselves and the public of the value of immunization procedures. Furthermore, the medical researchers must learn more about immunizing agents and host responses. I recall one infectious disease expert stating that such prevention is not a question of failure of the vaccines, but a failure of health care delivery. We must be vigilent in our efforts to utilize every means at our disposal to prevent the occurrence and spread of these contagious diseases. — *Marion Alberts, M.D., West Des Moines.*

Attack on Polio

The World Health Organization (WHO) and Rotary International have joined forces in a plan to defeat poliomyelitis on a global scale.

The purpose of the plan is to eliminate polio from every country on earth by the year 2000. Rotary will support the program with semiannual payments from its PolioPlus Fund. The Rotary Foundation's commitment to provide vaccine for polio immunization projects around the world has increased to more than $108.5 million.

Eighty-two countries and territories have received PolioPlus vaccine grants.

Call for Limit on Extended Wear Lenses

A recent study involving Harvard Medical School found the risk of ulcerative keratitis is 4 to 5 times greater for extended wear contact users than for daily users.

The FDA has asked manufacturers of extended wear soft contact lenses to reduce the recommended wearing time from 30 days to 1-7 days in product labeling and strengthen warnings about proper lens care.

The FDA also sent letters about the reduction in recommended wearing time from the previous 30 days to over 60,000 ophthalmologists.

Cocaine Use Up

Though the number of recreational drug users in America has dropped, the number of heavy cocaine users is soaring, according to a new survey conducted by the National Institute on Drug Abuse.

Since 1985, the number of Americans who said they had used drugs within the last 30 days has dropped 37%, according to a 1988 household survey. The number of frequent cocaine users climbed 33%.

The number of "current" (within the past 30 days) cocaine users dropped 50% from 5.8 million to 2.9 million, but heavy cocaine use registered a steep rise. Some 862,000 people said they used the drug once a week or more, compared with 647,000 in 1985.

There was also a significant hike in the number of people using cocaine daily.

(Continued next page)

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3. The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia.

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS.**

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE).** There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS);** other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.
2. Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.
3. Correction of acidosis, if present, with intravenous sodium bicarbonate.
4. Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity.

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Overlooking Alcoholism

According to a study at Johns Hopkins University, physicians often do not diagnose or treat alcoholism in their patients, despite the high prevalence of the disease in patient populations.

A study involving student and resident physicians at the Johns Hopkins School of Medicine found wide variation in attitudes and knowledge about alcoholism, their acceptance of responsibility for screening and referring patients and their confidence in dealing with the problem.

Physician Attitudes on Abortion

A national survey of family physicians and other primary care physicians conducted by *Physician's Management* magazine showed over half (57%) consider themselves "pro-choice" and 28% term themselves "pro-life." Fifteen percent rejected both labels when asked to describe their stance in the national abortion debate.

Asked whether they believe a husband should be able to obtain a legal injunction to prevent his wife from having an abortion, 34% said yes, 51% said no and 15% were unsure.

Over half the doctors surveyed (56%) said they generally approve of prescribing or dispensing contraceptives to minors without parental consent or notification.

AIDS and Collegians

In the first major study of HIV prevalence among college students, the Centers for Disease Control has learned 2 out of 1,000 students included in the study tested HIV positive. The study involved 19 colleges and universities and the sample included 16,861 students who visited their campus health center and required blood samples during the past year.

(Continued page 476)

6TH ANNUAL
PROGRESS IN INTERNAL MEDICINE
October 19-20, 1989

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Topics

AIDS Diagnostics: Everything You Wanted to Know but were Afraid to Ask
Quality Assurance: Impact on Clinicians and Approach for the Hospital
Therapy for Peptic Ulcer Disease
Polyp Surveillance
Vascular Surgery in Diabetes
Osteoporosis: Fact, Fads, and Fallacies
Asthma Update
Evaluating Patients for Drug Allergies
Bacteriology and Management of Human and Animal Bites
Lyme Disease: The Tick is Here
Occupational Allergy

Guest Faculty

Bernard D. Beitman, M.D., Professor of Psychiatry, Director, Panic/Cardiology Project, University of Missouri at Columbia.
TOPIC: *Chest Pain in Patients with Angiographically Normal Coronary Arteries*

Bruce Bistrian, M.D., Ph.D., Associate Professor of Medicine. Nutrition/Infection Laboratories, New England Deaconness Hospital, Boston, Massachusetts.
TOPIC: *Nutritional Support in the Hospitalized Patient*

Gregory C. Flaker, M.D., Associate Professor of Medicine, Director, Division of Cardiology, University of Missouri at Columbia.
TOPIC: *Stress and the Heart*

William E. Thornton, M.D., NASA Astronaut, Clinical Assistant Professor of Medicine, University of Texas Medical Branch, Galveston, Texas.
TOPIC: *Space Medicine*

Diane Wycoff, B.A., Supervisor, Protection Services, Iowa Department of Human Services, Cedar Rapids, Iowa.
TOPIC: *Adult Abuse - The Iowa Perspective*

Registration

For more information or to register, call 319/335-8597.

MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

"UPDATE ON FORENSIC EMERGENCY MEDICINE"

NOVEMBER 15, 1989

GUEST FACULTY

ROBERT J. STEIN, M.D.
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R.C. WOOTERS, M.D.
COUNTY MEDICAL EXAMINER
POLK COUNTY
BROADLAWNS HOSPITALS MEDICAL CENTER
DES MOINES, IOWA

TOPICS

"DETERMINATION/CAUSE OF DEATH: ENTRANCE AND EXIT WOUNDS"

"RECOGNITION OF PEDIATRIC-INFLICTED INJURIES"

"PRESERVATION OF EVIDENCE: MEDICAL/ LEGAL IMPLICATIONS FOR THE EMERGENCY ROOM PHYSICIAN"

"DEATH AND DYING IN THE EMERGENCY ROOM"

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Of the 16,861 students tested, 28 men and 2 women were HIV positive. Study results from individual campuses were not released.

AMA Survey of Physician Opinion

The American Medical Association recently released results of its 1989 survey of physician opinion on health care issues. The survey results are based on telephone interviews with 1,004 physicians practicing in the United States.

Of those surveyed:

- 29% said cost is the main problem facing health care in the U.S. today. Ten percent cited professional liability and 10% said government regulation was the main problem.
- 48% said patients generally demand too many health care services, such as tests, x-rays, etc.
- 34% said the federal government should require employers to provide health insurance coverage; 36% said health insurance should be a requirement except for small businesses or part time workers.
- 63% said their control over patient treatment decisions has decreased during the past several years.
- 53% said patients have unrealistic expectations about what a doctor can do to treat or cure them.
- 25% said they would probably not go into medicine if they were in college today.

(Continued next page)

"MANAGING MENTAL HEALTH/SUBSTANCE ABUSE CARE TO ACHIEVE RESULTS"
NOVEMBER 8 AND 9, 1989
MARRIOTT HOTEL, DES MOINES, IOWA

Mental health and substance abuse expenses account for 7-25 percent of all health benefit claims and 25 percent of all hospital days.

Fundamental approaches to mental health care are shifting due to clinical developments within and economic pressures from without. As health care professionals, experience firsthand the current programs in use to manage care and costs.

TOPICS

"Yes, You Can Get People Well Without Breaking the Bank," Alex R. Rodriquez, M.D., Sr., VP-Professional Services and Corporate Medical Director, Preferred Health Care, Ltd., Wilton, Connecticut.

"Special Perspectives on Treating Children and Adolescents," Victor Savitz, M.D., Medical Director, Managed Health Network, Los Angeles, California.

OTHER TOPICS INCLUDE

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* Presentations by Some of the Nation's Top Managed MH/SA Programs
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- 61% believe the professional liability situation has worsened in the past year.
- 35% said there are areas in medicine they do not practice because of rising malpractice insurance costs.
- 75% said the threat of malpractice suits causes them to do tests they might not otherwise believe are needed.
- 63% feel their practices are being effectively peer reviewed.
- 67% believe the overall impact of DRGs has been negative.
- 58% believe a resource based relative value scale should be used as a basis for physician reimbursement under Medicare.

Animal Research

According to a Gallup Organization survey commissioned by the AMA, 77% of Americans believe the use of animals in biomedical research is necessary for progress in medicine. A somewhat smaller group, 64%, said they actually support the use of animals in biomedical research; 29% oppose it and 6% were unsure.

Support for animal research increases with the education and income of the respondents.

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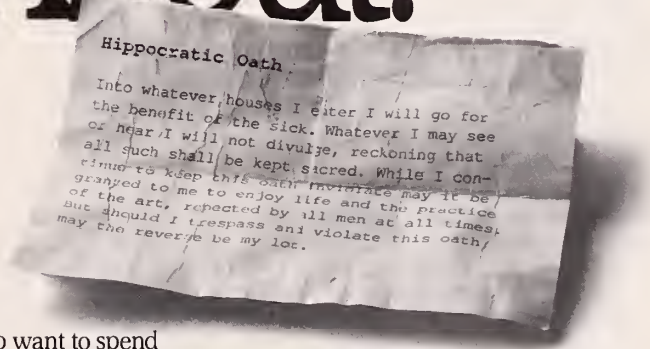
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"UPDATE ON INFECTIOUS DISEASES"

NOVEMBER 1, 1989

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DAVID MCKINSEY, M.D.
INFECTIOUS DISEASES SECTION
RESEARCH MEDICAL CENTER
KANSAS CITY, MISSOURI

TOPICS

"MANAGEMENT OF MIXED AEROBIC AND ANAEROBIC INFECTIONS"

"ANTIBIOTIC METABOLISM AND ITS RELEVANCE TO SELECTION AND THERAPY"

"MANAGEMENT OF LOWER RESPIRATORY TRACT INFECTIONS"

"DIAGNOSIS AND TREATMENT OF HERPES-SIMPLEX VIRUS"

"MANAGEMENT OF SURGICAL INFECTIONS"

"CURRENT MANAGEMENT AND TREATMENT OF PEDIATRIC BACTERIAL MENINGITIS"

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"DIAGNOSIS AND TREATMENT OF NOSOCOMIAL INFECTIONS"

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Hyperalimentation With Atherosclerosis Reversal

RICHARD LAWTON, M.D.
Iowa City, Iowa
ROMAN BABIJ, M.D.
Ontario, Oregon
ROBERT CLARK, M.D.
Des Moines, Iowa

The authors discuss management of a patient treated for 7 months with total central parenteral nutrition, using hypertonic glucose and aminoacids. Previous disease accounted in part for failure of the pulmonary, cardiac, renal and gastrointestinal systems.

A 7-MONTH STAY in an intensive care unit, with survival and complete rehabilitation, raises several issues: moral, ethical and diagnosis related groups (DRG's). Our patient had serial failure of the kidneys (non-oliguric), lungs and gastro-intestinal tract.

The patient, a 56-year-old male, suffered a perforated appendix. Surgical exploration revealed a perforated retrocecal appendix which necessitated considerable retrocecal-peritoneal dissection (Figure 1, Operation 1, following page). The patient's post-operative course seemed uncomplicated, but on the fifth day abdominal distention and shortness of breath were noted and marked the start of a very complicated course.

Dr. Lawton is clinical professor, emeritus, department of surgery, U. of I. Hospitals and Clinics. Dr. Clark is a surgery resident, at Veterans Administration Medical Center in Des Moines. Dr. Babij practices in Ontario, Oregon.

History

Several years prior to this hospitalization the patient was treated for angina. At that time he had electrocardiographic and chemical evidence of myocardial infarction. Coronary angiography revealed severe atherosclerotic disease and he was advised to have coronary bypass. He was discharged from the hospital on medication for angina and went back to work full-time in spite of exertional angina for which he took nitroglycerin tablets 4-5 times per day.

The patient had a 16-year history of epigastric pain and was taking large quantities of milk and baking soda. Recently, he had begun masticating his food more carefully. He occasionally vomited, suggesting obstruction from his duodenal ulcer. He had a 20-year history of cigarette smoking. During the previous hospitalization for acute myocardial infarction, a PaO2 of 70 to 73 mm Hg on room air was noted.

He often experienced shortness of breath which was attributed to his previous myocardial infarction. Chronic pulmonary disease

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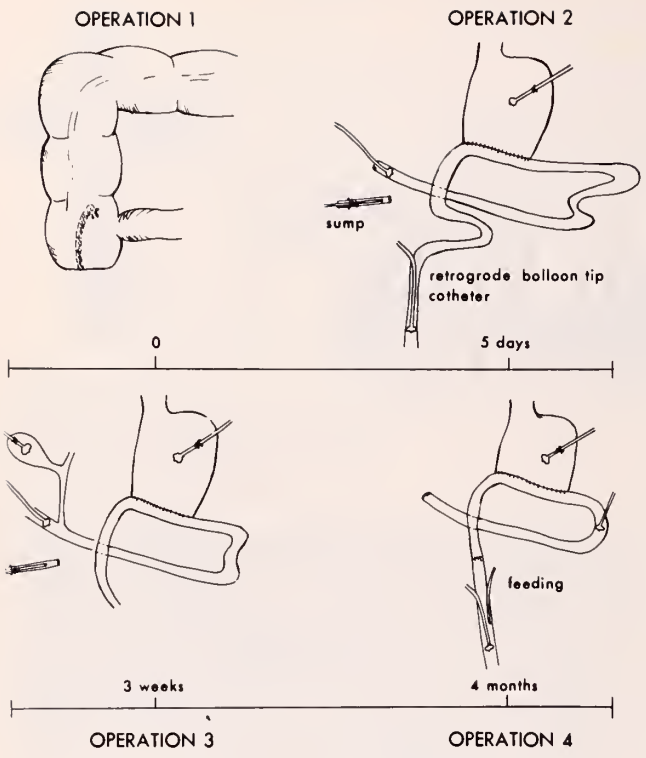


Figure 1. Four surgical procedures done on a patient who experienced a complicated post-operative course.

evolved from a history of feeling he was suffocating at night. At no time did he have orthopnea.

On the fifth post-operative day, a second operation was done for a perforated duodenal ulcer (Figure 1, Operation 2). A third operation was necessary on the 23rd day for a leaking duodenal stump as evidenced by bile leaking around the duodenal drainage catheter and failure of intestinal motility (Figure 1, Operation 3). Following that operation he developed acute non-oliguric renal failure. The lowest creatinine clearance was 3 ml/min. Since discharge from the hospital this has increased to 60 ml/min. Another operation was done 4 months following the original admission for possible intestinal obstruction (gut failure). A 50% gastric resection without vagotomy was done (Figure 1, Operation 4).

Though never in demonstrable failure, the heart was the 'Achilles Heel' of rehabilitation. On several occasions the patient had severe cardiac arrhythmias, evidenced by bradycardias, ventricular premature contractions and ventricular tachycardias leading to 3 episodes of fibrillation. Each occurrence of ventricular fibrillation was associated with attempts to "wean" the patient from the ventilator. The sensitivity of the myocardium to a variety of stimulae was probably the consequence of myocardial ischemia.[1]

Further Complications

Frequent runs of ventricular premature beats necessitated the use of antiarrhythmic drugs.[2] One of the "arrests" was associated with the clinical diagnosis of "sepsis." The reason for this sudden hemodynamic collapse was unclear. At this juncture, multiple organ system failure was well established and the patient's response to various conditions was difficult to evaluate. "Hot" vasodilitation was associated with the episode, lending some credence to the use of the word 'septic.'

This responded to a single precordial shock and when the cardiac activity resumed it was at normotensive levels (a rate of 80) and there was a rapid resumption of consciousness. Severe oliguria of approximately 6 hours duration ensued. After each episode of fibrillation and resuscitation, electrocardiograms failed to reveal any evidence of recent myocardial infarction and the cardiac enzymes were within normal limits. Tissue perfusion, except for the heart, was not a serious problem.[3]

Cholesterol and triglyceride levels were exceptionally low, in the range of 70-75 mg% for 2 determinations (Table 1). On one occasion the triglyceride level was 43 mg%. The patient was on a no-cholesterol diet which could account for some decrease in serum lipids, but hyperalimentation with amino acids may add another dimension. The hyperalimentation solution used was basically 8½% amino acids with 50% glucose. Vitamins and trace elements were added. Additional "B" vitamins and ascorbic acid (500 mg/day) were added to the standard vitamin replacement.

During the 7 months he lost 1 kg of weight. A special effort was made to keep the serum albumin near 4 mg/dl. This required 25-100 gm of exogenous albumin per day. The cholesterol level in a patient on a no-cholesterol diet seldom can be lowered to <150 mg%. After leaving the hospital the cholesterol level increased to 200 mg%, on no specific diet. The marked decrease in lipids may have induced a regression in coronary atherosclerosis which allowed extubation without cardiac arrest.

After repeated attempts at tracheal extubation, followed each time by life threatening

TABLE 1

SUMMARY OF LIPID DETERMINATIONS

	Date	Chole/ mg%	Trig/ mg%	C-CR	Creat.
Myocardial Infarction	9/23/81	358	251		1.1
	12/11/81	321	254		
Abdominal Catastrophe	1/17/84				
	3/29/84	125	74	3ml/min	7.0
	4/26/84	98	81		5.3
	5/08/84	107	76		
	5/17/84	72	43		3.3
Post Recovery	4/14/86	200		25ml/min	2.0

Chole — Cholesterol
Trig — Triglyceride
C-CR — Creatinine clearance ml/min
Creat — Creatinine

arrythmias, we were seriously considering coronary artery by-pass surgery.[4] The high mortality rate associated with post operative renal failure is more frequently being documented, especially when related to a complex fluid and electrolyte disturbance.[5, 6]

Discussion

This patient had marked arteriosclerosis with cardiac ischemia and myocardial infarction necessitating frequent nitroglycerin administration. He was advised to have coronary bypass for severe occlusion. Since his last hospitalization he has not required nitroglycerin and is fully rehabilitated. Prolonged intravenous hyperalimentation may be one way of reversing coronary arteriosclerosis. There is experimental evidence this disease process can be reversed in the subhuman primate.[7]

Scandanavian countries have been noted for a high incidence of coronary artery disease.[8] This has been attributed to dietary habits of high fat and cholesterol. A large part of the diet is composed of meat, eggs, pork and beef. During the German occupation of World War II, the diet changed to mainly vegetables. Consonant with this change, there was a marked decrease in coronary artery disease.[9] After the war, the old dietary regimens were re-instituted with a concomitant increase in coronary artery disease. [10, 11]

Another case report involving Nathan Pritikin is of interest. He was diagnosed as having coronary heart disease about 30 years before his death. At that time his cholesterol level was 300 mg%. With diet and exercise his cholesterol decreased to 150 mg%. Following his death by exsanguination at age 69, an autopsy demonstrated the absence of cholesterol — fatty deposits or calcifications. The coronary arteries were wide open. He was in failing health at the time of his demise as a consequence of leukemia for which he had been treated for 27 years.[12]

In the severely ill patient whose lipids are rapidly decreasing the mortality may be quite high. This condition may lead to cellular membrane failure and death (authors' unpublished data).

Summary

This patient is apparently healthier now than before hospitalization due to several factors: his duodenal ulcer disease is controlled; he has stopped smoking and has fewer respiratory problems (chronic cough and breathlessness); renal function is gradually improving; he no longer experiences effort angina and he is on no drugs. This is a clinico-epidemiologic study with presumptive evidence of atherosclerosis reversal. This analysis does not have the weight of a prospective controlled clinical trial but may act as a stimulus.

References

References noted in this article are available either from the authors or the editors of *IOWA MEDICINE*.

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Do you or a colleague have a hobby or interest you'd like to share with other *IOWA MEDICINE* readers? Whatever the talent (an accomplished artist or musician, a craftsman, an international traveller . . .), we'd like to hear about it! Call Christine Clark at IMS Headquarters, 223-1401 or 1-800-747-3070.

Ascaris Pneumonitis: Case Presentation

WARNE RAMSEY, M.D.
Bettendorf, Iowa

The author discusses the case of a 74-year-old woman with ascaris pneumonitis. The diagnosis was complex because of unrelated findings.

THIS CASE PRESENTATION CONCERNS a 74-year-old lady who had previously been in good health but, over a period of about 2 weeks, developed malaise, aching chills, fatigue and anorexia. Temperature was intermittently as high as 102. She had a mild non-productive cough.

She thought she had a "cold" but on advice of family members, went to a walk-in clinic. She was told she had a lower respiratory infection with an elevated WBC (11,600, no differential), and was given "antibiotics." Her temperature and chills subsided with the antibiotics but fatigue, weakness and general malaise became worse. Nausea developed and she lost 10 pounds.

She returned to the clinic. The leukocytosis had improved (results not available) but a chest x-ray showed a right upper lobe mass. A pulmonology consult was obtained and she was hospitalized.

Dr. Ramsey is a family practice physician in Bettendorf.

Lung Masses

Chest x-ray on admission revealed a mass in the right mid-lung field extending toward the hilum, one in the left apex and one in the left hilum. CT scan confirmed these and found 2 additional mass densities. The radiologist's impression was pulmonary metastasis.

Other tests were done. Bone scan showed increased uptake in lumbar and cervical spine sites. Abdominal CT was normal. Mammogram showed a small questionable density in the right breast. This was repeated with additional views the next day and x-ray was normal. The only abnormality on the SMA was an alk. phosphatase of 162. The CEA was 7.3 (normal 0-2.5). Cancer antigen was 3.4 (normal 0-35). Sonogram of thyroid showed a 1.6 cm. solid mass in the left lobe which was not palpable.

Bronchoscopy was done but no abnormalities found. Cultures and biopsies were negative. Bronchoscopy was repeated with the same results. One week after admission WBC was 7,500 (70 segs, 24 lymphs, 3 monocytes and 3 eosinophils).

At this point, I became involved. In the hospital a week and acutely aware her illness was more than "a cold," the patient insisted I assist in her care as her primary physician.

She had been on cefazolin since admission. Repeat chest x-rays showed some improvement. Repeat CBC was done, WBC was 10,100, 16 lymphocytes, 9 monocytes, 2 eosinophils, 1 basophils, and 72 segmenters. She remained weak, complained of malaise and weight loss continued. She was depressed and had decided to leave the hospital against med-

ical advice. She felt she should not have extensive care and tests at her age if she had advanced cancer.

Colonoscopy Performed

A consulting oncologist did not think the CEA was high enough to prove a malignancy. Both he and a surgeon evaluated the bone scan. The "hot" spots were thought to be from arthritis. The thyroid and breast findings were not thought to be significant. Alpha-feto-proteins were normal.

In search of a primary lesion, a colonoscopy was done, and a 15 cm Ascaris lumbricoides found and removed. No other helminths were found. Upper GI and barium enema were normal except for a sliding hiatal hernia.

She was treated with piperazine citrate. She began to feel better within 2 days.[5] As noted below, this was probably coincidental. Follow up chest X-rays showed gradual and complete resolution of the lesions.

Ascaris infection is not rare in the midwest, but not endemic as it is in more temperate or less sanitary areas. Most often we encounter it when a mother brings in an adult worm her asymptomatic child has passed.[7]

The fertilized egg matures from single cell stage to first stage larva and first molting to become infective in 2 to 3 weeks. The ingested larva hatches in the duodenum and penetrates the intestine to reach lymphatics and veins. They are carried thorugh the heart and pulmonary vessels to capillaries, where they enter the alveoli. Increasing in size and molting to third stage, they move up the trachea and down to the intestine where the rest of the growth and maturation occurs. An adult worm stays in the host for over a year and may produce 200,000 eggs per day.[1, 2]

Ascaris Infection Symptoms

There usually are no symptoms associated with the infection. The larval migration may cause intense tissue reaction in the liver and lungs, with inflammation, eosinophilic infiltration and granuloma formation. The adults will migrate, especially if irritated as with elevated temperature or by some medication. They may move into the common duct, causing pancreatitis or liver abscesses. In severe cases they have been found in the heart, brain, liver, veins and appendix, emerging from the umbilicus, nose and mouth. They may be numerous enough to cause obstruction.[1, 2]

Distinct Pathology

People who are re-infected are more likely to be sensitized and have allergic symptoms including asthma and swelling of lips. Ascaris pneumonitis produces distinct pathology, with eosinophils, macrophages and larvae. Loffler's syndrome consists of pulmonary infiltrates and peripheral eosinophilia.[3]

Symptoms of ascaris pneumonitis include dyspnea, rales, wheezes, dry cough usually non-productive, fever, lung infiltrates and usually eosinophilia. The esinophilia is transient and is probably caused by transpulmonary migration of the larval form.[3]

Sputum and gastric washings may contain larvae. Stool specimens may contain eggs. Pulmonary symptoms occur during the larval stage, so there may be no adult worm or eggs present.

Symptoms from infection by adult worms include colic, bloating and weight loss. More severe symptoms caused by migrating adults are noted above.

Recommended Treatment

Recommended treatment is piperazine citrate (Antepar). A single dose will cure 80% of infections, second dose 95%. Piperazine relaxes the ascaris, making it unable to maintain its position and it is passed. Pyrantel pamoate is also considered effective in a single dose.[1, 2, 6] Additional procedures may be needed for severe infections, perhaps surgery for obstruction or drainage of abscesses.

There is no treatment that helps the pneumonitis as it is transient. A sensitized person is likely to have more problems if re-infected, so prevention is important. Sanitation must be emphasized, particularly fecal contamination of soil. Sunlight and temperature above 40°C will shorten the life of the eggs, but they can resist drying and cold and many chemicals and have been known to remain infective for up to 10 years.

Summary

This is a case of a 74-year-old lady with ascaris pneumonitis whose presenting com-

(Continued next page)

plaint was a respiratory infection. X-ray suggested neoplasia. The diagnosis was more complex because of other unrelated findings suggestive of thyroid and breast lesions. She did not display the expected eosinophilia, but this is transient and may have been missed.

She resides in an urban area and has good hygiene habits. No source of the infection could be found. Diagnosis is most commonly made by finding eggs in the stool; occasionally an adult worm is passed in the stool. In this case the diagnosis was considered when an adult worm was found during sigmoidoscopy. There is a brief discussion of ascaris infection.

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OMAHA MID-WEST
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57th ANNUAL
POSTGRADUATE ASSEMBLY

NOVEMBER 2, 3 and 4, 1989

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THE IOWA MEDICAL SOCIETY — MEETING YOUR NEEDS!

There are certain crucial needs the Iowa physician must satisfy to practice medicine within legal bounds. Included here are such matters as licensure, continuing education, maintenance of narcotic authorization, etc.

There are additionally other needs equally as important to the Iowa medical practitioner. Illustrative here are medical liability insurance, health insurance for self, family and employees, insurance protection against death or disability, etc.

Thirdly, there are needs which, if met, give the physician extra comfort in knowing actions or precautions have been taken to meet particular contingencies. Reference is made here to credit capacity, debt recovery support, practice management, etc.

Seeking to deliver in this broad arena, the Iowa Medical Society has developed an array of support services and products for consideration by its member physicians. The IMS Committee on Member Services and the IMS SERVICES Board of Directors are responsible for the ongoing evaluation of these programs as to their worth and receptivity. It is the further duty of these bodies to consider and recommend appropriate new programs.

This folder highlights the several programs furnished by the Iowa Medical Society and its subsidiary, IMS SERVICES, or by one of several outside companies with which a positive working relationship has been established. Detailed information is available on any program described.

MEDICAL MALPRACTICE INSURANCE

The Iowa Physicians Mutual Insurance Trust (IPMIT) provides a key member benefit. This important program was initiated in 1985 to make medical liability insurance available to qualified physician members of the Iowa Medical Society. The limits of IPMIT coverage extend to $5 million. The program is fully regulated by the State of Iowa. More than 1,000 Iowa physicians are insured by IPMIT. Extensive physician leadership is involved in the IPMIT underwriting, claims and risk management divisions. Marketing of IPMIT is assigned to IMS SERVICES, a subsidiary of the Iowa Medical Society; IMS SERVICES should be contacted for information.

HEALTH INSURANCE

The Statewide Physicians Group Health Program is open to members of the Iowa Medical Society, their families and their employees. The program is underwritten by Blue Cross/Blue Shield and includes several deductible options. Hospital and medical/surgical benefits are furnished with dental coverage as an additional option. New IMS members have 90 days to enroll; open enrollments are held periodically for existing members. The program is sold and serviced by The Prouty Company. Information may be obtained by contacting either Prouty or IMS SERVICES.

ACCIDENT AND SICKNESS DISABILITY INSURANCE

Three insurance coverages are available in this area. All are administered by The Prouty Company. Detailed information about each program may be obtained from The Prouty Company.

Crown Life — Benefits are available to $12,000 per month. Definition of disability is *your specialty* for full term of contract. Other optional benefits include income replacement, residual disability, cost of living adjustment rider, lifetime sickness benefits, and future increase option. Right of renewal and rates are guaranteed to age 65. Coverage is conditionally renewable between ages 65 and 72 for practicing physicians. Various waiting periods (30, 60, 90, 180 or 365 days) are available. All IMS members in active practice age 60 or under may apply.

Commercial Life Insurance — Benefits are available to $6,000 monthly. Duration of benefits is up to lifetime for accident and age 65 for illness. Definition of disability is *your specialty* for full term of contract. Reduced rates are offered for insureds under age 40. Benefits are available from the first day of disability for accident and the eighth day (or first day of hospital confinement) for sickness. Optional plans allow different waiting periods. Special renewal features and conversion options are provided. All new IMS members are eligible for the base amount up to 90 days regardless of medical history. Insurable members are eligible any time prior to age 55. Coverage continues to age 70 with special conversion available after age 70.

UNUM (Union Mutual) — Benefits are available to $35,000 monthly ($420,000 annually) for physicians and/or their employees. In offices with 10 or more employees, the issuance of coverage is guaranteed. Other features include residual disability, conversion option and pension accrual. Applicants must be age 65 or under. The coverage is restricted to offices with more than 10 employees.

OFFICE OVERHEAD EXPENSE INSURANCE

This disability insurance coverage is available in selected amounts from $500 to $6,000 monthly. It is intended as a reimbursement against office expenses, e.g., rent, staff wages, utilities, professional liability insurance, etc. Benefits begin after a selected waiting period of either 15 or 30 days. Benefits are payable to 24 months. The program is underwritten by the Commercial Insurance Company. The program is administered by The Prouty Company.

LIFE INSURANCE

Several life insurance options are provided for interested IMS-member physicians. Unless otherwise specified, the programs listed below are administered by The Prouty Company.

North American Company for Life and Health Insurance — This term insurance has a minimum limit of $50,000; no upper limits are set. The policy is guaranteed renewable/noncancelable; rates and renewability are guaranteed. A special premium discount is available to nonsmokers. Coverage is provided to spouses with a 5-year rate "set back" for female applicants. Benefits are not reduced with age. Coverage is renewable to age 75 with full conversion possible without evidence of insurability for those under age 65. Waiver of premium is included automatically. Dividends are now being paid under this product commencing April 1, 1988. The new dividend scale provides a 10% dividend on each policy anniversary for those insured members under the age of 46. For those insured members age 46 and above, dividends are currently being credited at a rate of 20%. Any IMS member under age 65 may apply — as well as spouses and dependent children age 19 and under (or 25 and under if full time student).

Lincoln Benefit Life — This insured retirement annuity contract is provided for IMS members, their employees and families. It has competitive interest rates, tax advantages and income options, plus safety. Payment is possible either in a single amount or in periodic contributions. The minimum annual contribution in the first year is $5,000. The program is called "Futurist III"; it requires no medical underwriting and carries no policy fees, front-end sales charge or management fee. It is available to interested member physicians through Coordinated Financial Services.

SPECIAL COVERAGE PROGRAMS

Insurance Company of North America — An insurance program furnishing high benefit limits for accidental death and dismemberment may be obtained by IMS members through the Insurance Company of North America. The coverage program is administered by The Prouty Company. Coverage limits range from $25,000 to $250,000. Special permanent and total disability features are available including loss of sight. Coverage is available with no medical underwriting and is renewable to age 70. IMS members under age 65 may apply.

Prime Financial Benefit Trust — This special program was authorized in 1988 by the Iowa Medical Society with creation of a special trust. Features include tax deductible contributions over and above retirement plan funding; pre-retirement distribution without tax penalty; tax deferred growth on assets; malpractice tail funding; death benefits up to 10 times annual salary; severance up to 2 times annual salary. Contact IMS SERVICES for information.

WORKERS' COMPENSATION INSURANCE

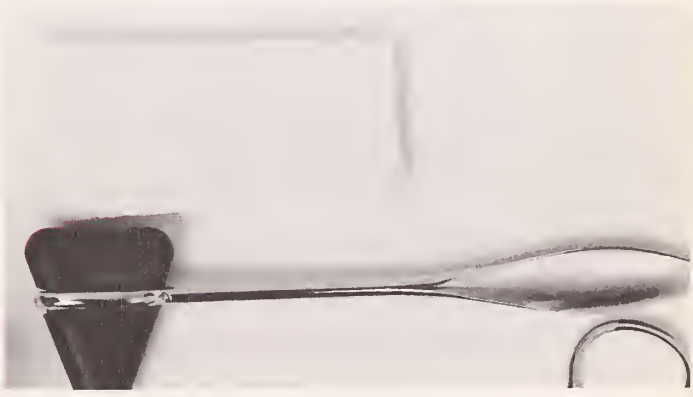
This long-standing program enables member physicians to obtain the Workers' Compensation coverage which is required by law. It provides benefits for work-related injuries. In existence for more than 10 years, the program has a competitive rating structure, plus it has paid annual dividends to the participants. The program is provided through the Dodson Insurance Group. Information is available from IMS SERVICES or Mr. Ken Coulter, Dodson representative, 205 Eighth Avenue South, Clear Lake, Iowa 50428 (515/357-6739).

FINANCIAL/RETIREMENT PENSION PLANNING

Counsel and assistance in each of these interrelated areas is available to member physicians through the Iowa Medical Society. For several years special seminars in financial and retirement planning have been presented for interested IMS-member physicians. These programs have been offered in collaboration with Coordinated Financial Services. Individual physicians, as well as offices and clinics, may avail themselves of personal planning through Coordinated Financial Services. Assistance is furnished on request in the development and administration of plans intended to achieve sound and beneficial financial goals.

COMPUTER ASSISTANCE PROGRAM

Will a computer make your practice more productive? Help in deciding is available from the Iowa Medical Society Computer Assistance Program. This 3-phase program includes educational seminars, individual consultation and feasibility analysis, and system availability. The program provides endorsement of the AMOS software as developed by Medical Computer Management, Inc. Approximately 30 medical offices/clinics have installed the AMOS program with related hardware. Information is available from IMS SERVICES.



PRACTICE MANAGEMENT CONSULTATION

Greater productivity! Increased efficiency! Quality enhancement! Overhead containment! Strengthened risk management! Increasingly, Iowa physicians are addressing these topics. Outside consultation is available through this program, which is offered in collaboration with Abbey & Abbey, Consultants, Inc. Information on this program may be obtained by contacting Abbey & Abbey or IMS SERVICES.

GOLD MASTERCARD PROGRAM

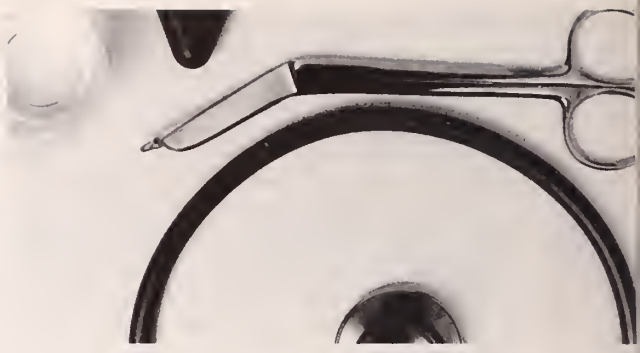
Nearly 500 IMS-member physicians are using Gold MasterCards acquired under this program, which began in 1985. No card fee is charged in the first year; attractive high credit limits are available to cardholders. The program is offered through Trans National Financial Services. Information may be requested from IMS SERVICES.

DEBT COLLECTION SERVICE

Sponsored by medical associations in many states, I.C. System is endorsed by the Iowa Medical Society to perform debt collection services for offices and clinics of member physicians. Nearly 200 Iowa physician offices and clinics use this program, which has collected nearly $3 million in outstanding debts. Detailed information about the program is available from IMS SERVICES.

AUTOMOBILE INSURANCE

This personal automobile insurance is available to member physicians, their families and their employees. Various deductibles and coverage options are provided. Competitive premiums exist under this IMS-sponsored program, which is underwritten by the BLC Insurance Company and administered by The Prouty Company. All IMS members with valid driver's licenses may apply.



AUTOMOBILE RENTAL DISCOUNTS

A car rental discount program is available to IMS-member physicians through Avis. IMS/Avis identification cards have been distributed to all member physicians. Duplicate cards may be obtained from the office of IMS SERVICES.

TRAVEL PROGRAMS

Each year the Iowa Medical Society selects several outstanding travel opportunities provided by INTRAV, a highly respected travel organization, and offers these trips to interested member physicians. Information on this ongoing program and specific "travel adventures" may be obtained by contacting the Iowa Medical Society.

PRINTING SERVICES

Medical offices require forms, stationery, envelopes, prescription pads and a variety of printed items. The Iowa Medical Society Print Shop is actively providing such materials to interested offices and clinics on an extremely cost-effective basis. Physicians interested in this assistance may contact the Iowa Medical Society Print Shop.

INFORMATION/APPLICATION SOURCES

As noted in each section, detailed information on the Iowa Medical Society-sponsored programs is available from several sources. These contact points are either companies directly part of the IMS or are ones with which the IMS has had a long and good relationship. Please refer to the listing below for addresses/telephone numbers for sources of complete information on the IMS-sponsored programs:

IOWA MEDICAL SOCIETY — *1001 Grand Avenue, West Des Moines, Iowa 50265; telephone — 515/223-1401 or 800/747-3070 (In-state WATS)*

IMS SERVICES — *1231 Eighth Street, Suite 232, West Des Moines, Iowa 50265; telephone — 515/223-2816 or 800/642-6054 (In-state WATS)*

THE PROUTY COMPANY — *309 Court Avenue, Suite 510, Des Moines, Iowa 50309; telephone — 515/246-1712 or 800/532-1105 (In-state WATS)*

ABBEY & ABBEY, CONSULTANTS, INC. — *1200 35th Street, Suite 308, West Des Moines, Iowa 50265; telephone — 515/224-0188 or 800/728-0188 (In-state WATS)*

COORDINATED FINANCIAL SERVICES — *1012 Grand Avenue, West Des Moines, Iowa 50265; telephone — 515/226-9000 or 800/798-1012 (In-state WATS)*

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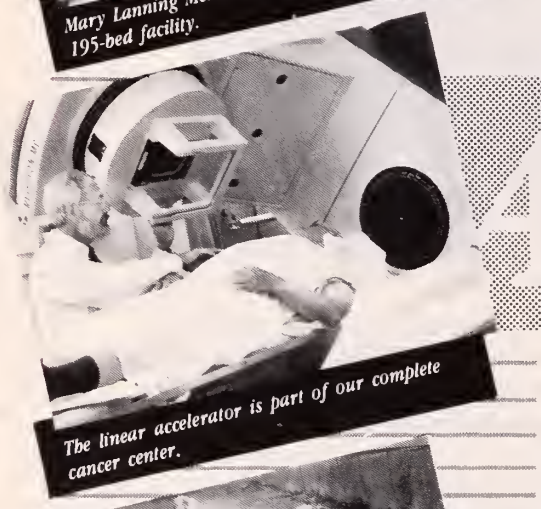
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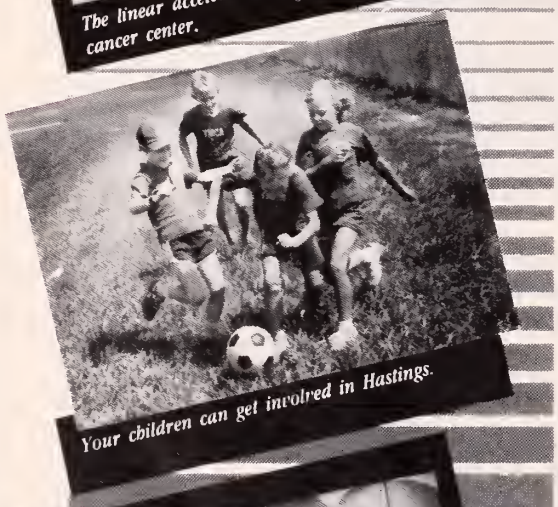
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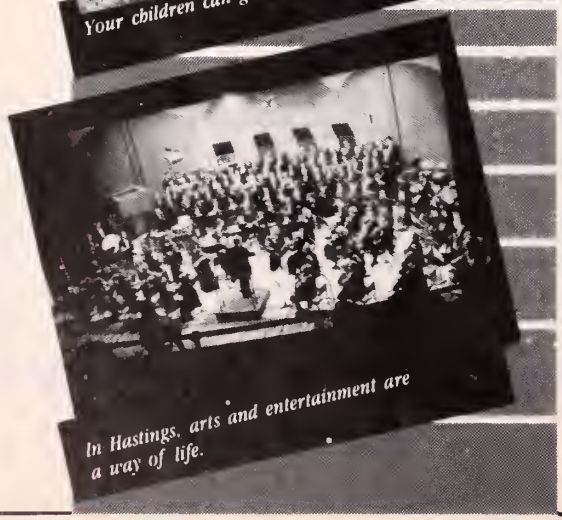
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Marion E. Alberts, M.D.



The Editor Comments

Immunization

CENTURIES BEFORE THE SCIENTIFIC basis of immunological mechanisms was learned, Jenner used the term "virus" to describe the cause of smallpox. Jenner's connotation of virus was that of a noxious agent. Not until the early part of this century was the term used to denote a group of microbial agents known to cause infections. It was recognized early that a mild attack of a disease gave rise to immunity. Early pioneers in disease prevention deliberately exposed individuals to a virulant disease to prove immunity could be established. The ancient Chinese practiced "variolation" wherein dried powder of smallpox crusts were inhaled through the nose.

The story of the development of smallpox vaccine goes back to the epoch experiment of Edward Jenner. His 1796 case history of inoculation of cowpox from the dairymaid Sarah Neames to the healthy 8-year-old James Phipps is a classic of medical history. Inoculation of James Phipps and subsequent contact with a patient with smallpox resulting in no disease culminated the success of vaccination.

However, the battle for acceptance of the procedure was far from complete, for there were complications. Even with modification of the technique and better controls over the vaccine, there remained some risk to smallpox vaccination. Vaccinia remained a problem even until the cessation of smallpox vaccination worldwide in the middle of this century. The success in the world-wide banishment of smallpox attests to the value of disease prevention by immunization.

Subsequent to the success with smallpox vaccination there has been a succession of immunization agents to prevent diseases of varied nature. Diphtheria, tetanus, pertussis, poliomyelitis, measles, rubella and varicella have bowed to successful use of vaccines. Other vaccine agents such as for influenza, pneumococcus and rabies have joined the armamentarium for preventive medicine in recent years.

The battle is continuous to irradicate infectious diseases from our midst. Great strides have been taken in the more cultured nations, but the scourge of disease persists in the more destitute nations. Even in the United States, with our techniques and programs of immunization, recurrences persist. Our knowledge of vaccines is incomplete. For example, measles appears to be more prevalent in some areas of our country in recent years. Do the vaccines need modification? Is the timing of administration wrong? Are many people not receiving proper immunization? When are "booster" injections necessary? These are some of the many questions for which answers are forthcoming.

Many of the older population have no immunity to diseases such as measles and varicella. Some segments of the U.S. have not had the advantages of mass immunization programs. Epidemics still can occur. Immunization is a proven procedure that must be made available to all. It remains the mission of the medical profession not only to cure disease but to participate actively in measures to prevent disease. The battle is not over until we can emulate the success in eradication of smallpox with other infectious diseases. Continuing vigilance and efforts will prove that children and adults need not suffer the discomforts or even death from contagious infectious diseases. — *M.E.A.*

Richard M. Caplan, M.D.



CME Notebook

OWH and Junk Mail

YOU ALREADY KNOW WHAT junk mail is, but perhaps you need me to tell you that OWH stands for Oliver Wendell Holmes, America's great physician-teacher-poet of the last century. Unsolicited advertising mail is one of the minor plagues of modern commercial life, brought to us by courtesy of computerized mailing lists and taxpayer subsidy of bulk mail. Some such items may prove useful, even desirable (advertising for CME naturally included); occasionally, "throwaway" journals offer something timely, although certainly less trustworthy than the peer-reviewed journals we receive by subscription or society membership.

By contrast, OWH is certainly not a plague of modern life. He is a joy because of his wit, wisdom and graceful style. A few of his many poems are still worth their weight in gold, and *The Autocrat of the Breakfast Table* still gives us one of our best glimpses of American life and manners 130 years ago — plus a great many chuckles.

I speak of this because of my opportunity to read some manuscript letters he wrote, now housed at the splendid Reynolds Historical Library at the University of Alabama/Birmingham. One letter was a special gem, a sort that most of us today would not bother to write at all, let alone this much by hand about an incorrect bill. But OWH was indeed a writer. I so enjoyed holding the item and reading it from his own hand. As I thought how some problems continue unabated, I decided to share his letter with you. Another time I may tell you something about his famous relation to childbed fever and to Sherlock Holmes.

Boston April 4, 1871

Editors of "The Capital"

Gentlemen,

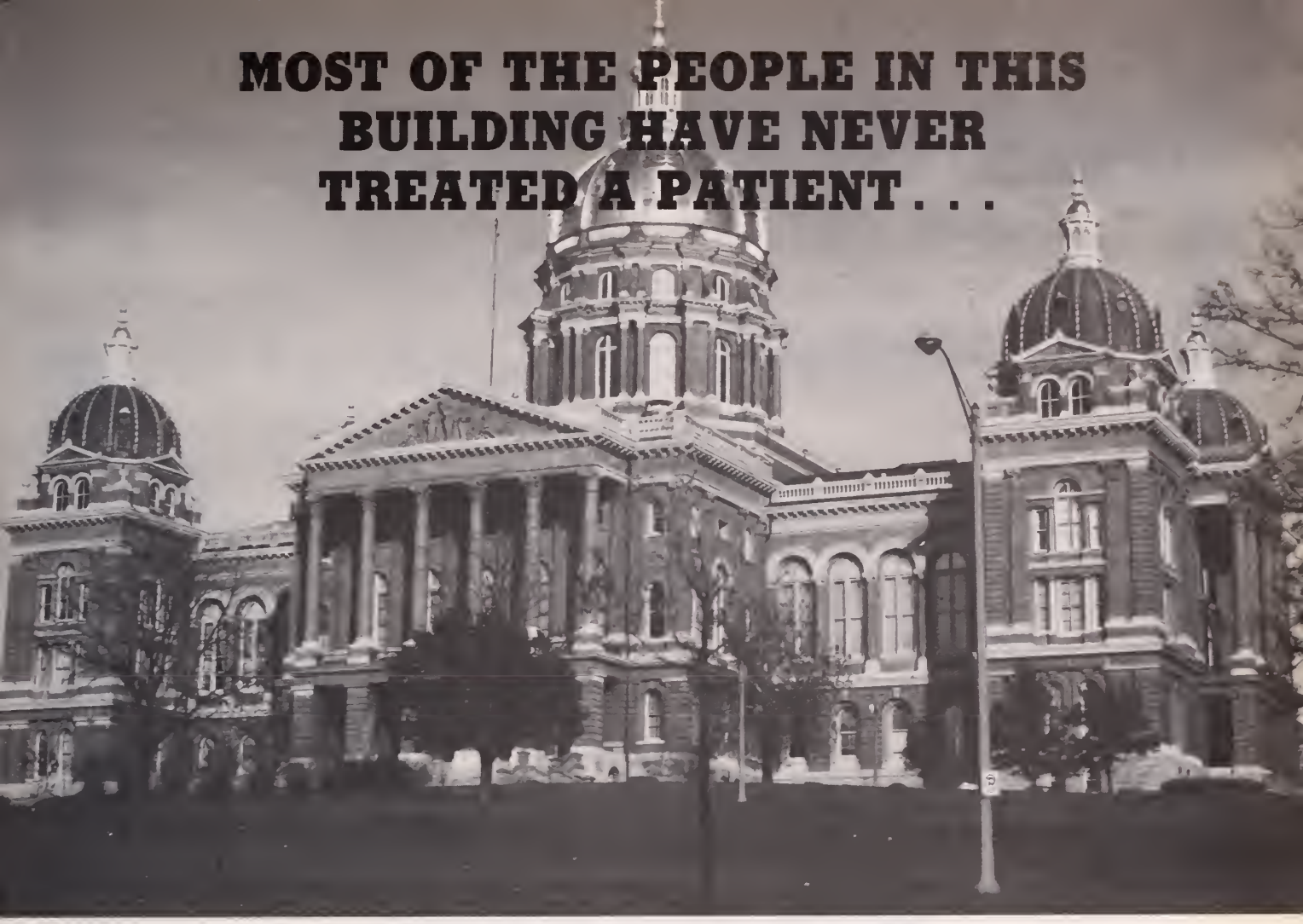
This bill was sent me doubtless through inadvertence as I never subscribed for the paper.

I have received it for a number of months, but as various papers are sent me by their editors and publishers, I took it for granted that "The Capital" came in the same way. I never order a paper discontinued, if it is sent without my request, unless I am distinctly notified that this is expected. I had a bill sent me a few months ago for another paper which I had been receiving. I told the Editors that [unreadable] was not subscription, and heard nothing more from them.

The truth is I pay for and receive marked (sic) more papers and periodicals than I can possibly read, and am much more likely to cut down my present list than to increase it. But I have no question that this bill is an accident, and that I have to thank you, as I do with much pleasure for the occasional glimpses at Washington life which I have caught as I scan my eye over the papers you have kindly sent me, and which you must not tax yourselves with sending me any longer.

Yours very truly
O. W. Holmes

Dr. Kaplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.



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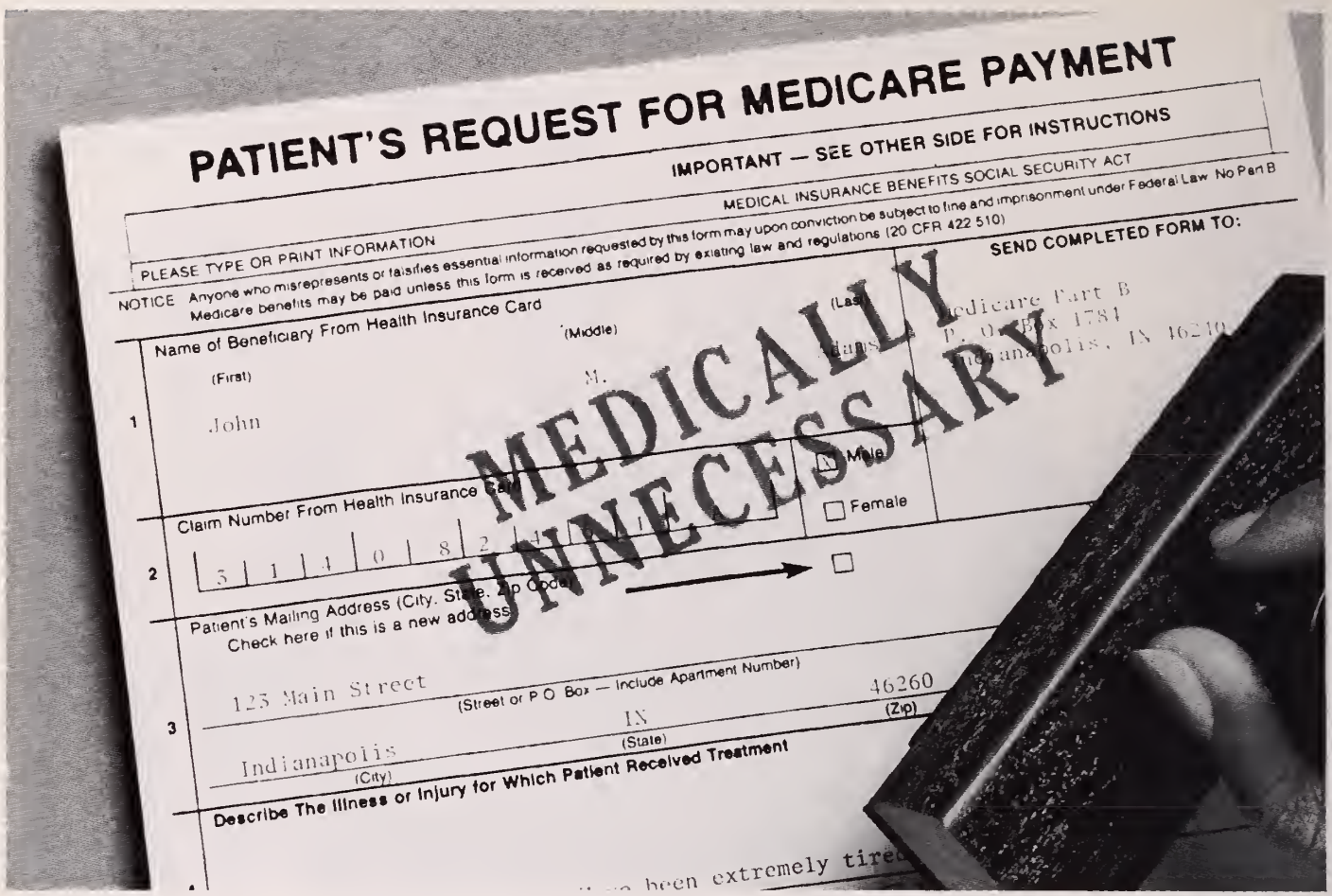
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Contributions are not limited to the suggested amount. Neither the AMA nor the IMS will favor or disadvantage anyone based upon the amounts of or failure to make pac contributions. Contributions are subject to the limitations of FEC Regulations. (Federal Regulations require this notice.) Paid for by the Iowa Medical Political Action Committee, 1001 Grand Avenue, West Des Moines, IA 50265. Contributions to AMPAC and IMPAC are not deductible as charitable contributions for Federal Income Tax purposes. If your practice is incorporated, IMPAC and AMPAC voluntary political



DIAGNOSIS.

Just months ago, physicians' rights to due process were jeopardized when Medicare carriers issued thousands of refund notices for "medically unnecessary" services. Refund notices were being sent to patients and physicians without adequate claims investigation and without information to wage an appeal. Left unchecked, this process threatens to severely undermine the basic trust between physician and patient.

Things are different now...thanks to the AMA. Our committed work with the Health Care Financing Administration (HCFA) to solve this problem has paid off. Because of the AMA's determination to protect the rights of physicians and patients, HCFA has issued new instructions to Medicare carriers. Carriers are now required to contact physicians directly for additional information before any claim is denied or any patient notices are released.

But there's more work to be done. During the next few months, HCFA, working with the AMA, will develop an educational program for improving physician understanding of the whole process. We must continue to look out for your patients and for your rights, too. But we can't do it without your help.

Our members make a difference.
If you're already a member, we need your continued support. If you're not,
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In most cases, medical association dues may be deductible as professional or business expenses.
Dues and other contributions to the AMA are not deductible as charitable contributions for Federal income tax purposes.

Good Records Yield Benefits

INCREASINGLY COMPLEX COMPLIANCE ISSUES are a fact of life. Good records are important in dealing with these issues. Reliable record-keeping takes minimal effort and yields significant benefits.

Records fall into 2 categories: business and individual. This month's analysis concerns individual records.

Personal Records

Since the information on your birth certificate will be needed often, it's important to keep it in a safe place. Death certificates also need to be filed carefully. Other documents which should be retained include marriage certificates, divorce and adoption papers, military service papers, citizenship records or other documents that are court or government recorded.

Consumer Records

Consumer records are documentation for product purchases. Payments for services should be carefully documented and recorded as well.

To properly track consumer transactions, save contracts, receipts showing the date and amount of purchases and product and service warranties. Warranties should normally be maintained until they expire. Retain loan agreements, purchase slips and billing statements until the debts are paid off. Maintain a list of credit card account numbers and phone numbers in the event the cards are lost or stolen.

An organized system will remind you to claim deductions and may save tax dollars. Items such as interest deductions, unreimbursed business expenses and charitable contributions may require extensive support documentation. Incomplete records make it difficult to answer Internal Revenue Service inquiries.

Categorizing Records

Most records are temporary or permanent. Temporary records are primarily those needed to support income and expenses and should be kept for 6 years. Permanent records are needed to support the cost of assets acquired and investments made. They should be kept for life or until 3 years after the due date for the tax returns that include the income or loss on such assets as investments when disposed of or sold.

Once you've organized your files, don't fall into the trap of saving unnecessary documents. Clean out your files periodically. Items such as accident reports and service contracts need to be kept for 6 years.

On a more permanent basis, consumers should retain brokerage and fund transactions, stock option agreements, insurance policies, certificates of deposit, custody agreements and divorce decrees. House records (deed, title, insurance policy, receipts, canceled checks for capital improvements and documents pertaining to the purchase and sale of a house) need to be saved. Also in the permanent category are your power of attorney, retirement and trust agreements and your will.

Photos or a videotape of your valuables can serve as records that are helpful in the case of robbery or fire. Include a list of your financial assets and advisors.

This brief analysis offers only guidelines. Specific questions should be addressed to your tax or business advisor.

Information for this article was obtained from the American Institute of Certified Public Accountants and submitted by Kevin Prust, a partner with McGladrey & Pullen, Des Moines.

Health Care Coverage That Wasn't Born Yesterday

The changes in health care and health coverage in the last five decades have been tremendous. And, through it all, Iowa's Blue Cross and Blue Shield Plans have set the pace. All the while, we have worked diligently to help our customers get the most out of their health care dollars, to provide excellence in service and to give our members cost-efficient, quality benefits. Like Total Health Network of Iowa and Family Health Plan, our innovative health maintenance organizations...ALLIANCE Select, our preferred provider program...and Delta Dental Plan of Iowa.

We've worked with the providers of health care for 50 years to assure Iowans of affordable, high-quality coverage. And you can be sure that we'll be doing the same for another 50 years. It's a tradition we're proud of...and one you can count on.



Blue Cross Blue Shield

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Consumer Safe Products

REDUCING CONSUMER INJURIES and death from products used in and around the home, schools and in recreational activities is a major health and safety objective facing our nation. Each year consumer products are involved in about 28,000 deaths and 32 million injuries, costing approximately $10 billion in emergency room treatment alone.

Home accidents affect consumers of all ages but the young and the aged are most vulnerable. Accidents are the leading killer of children; more children die from preventable injuries each year than from all childhood diseases combined. In 1987, accidents killed nearly 8,000 children age 14 and younger; 50,000 children were permanently disabled. The Surgeon General declared "If a disease were killing our children in the proportions accidents are, people would be outraged and demand that this killer be stopped."

Older Americans are also home accident victims. More than 600,000 older persons (age 65 and older) are treated each year in emergency rooms for injuries associated with consumer products. The accident death rate among persons age 65 and over is over 3 times the rate for the rest of the population.

A variety of strategies must be implemented to reduce consumer product accidents. Key among these is strengthening the role of the medical community, state and local health agencies and the federal Consumer Product Safety Commission (CPSC) and the Centers for Disease Control in protecting consumers.

In addition to strong federal and state leadership on safety issues, effective strategies to reduce deaths and injuries from consumer products must be implemented. Safety standards, both voluntary and mandatory, should be developed. Compliance with these standards must be monitored to assure their effectiveness.

Consumer education is another important component in an environment where new product technologies and first-time product users abound. Finally, the use of safety equipment, devices, warnings, instructions and other measures to prevent consumer product accidents should be promoted.

Incorporating these strategies into health and safety policy is a shared responsibility. The federal agencies must clearly undertake measures to protect the public. In cases where these agencies fail to do so, Congress and state governments may need to provide leadership. Non-government entities such as building code organizations, insurance companies, manufacturers, retailers and consumer and health groups also can play important roles in enhancing consumer product safety.

1990 Priority Projects

In fiscal year 1990, the Commission has selected 4 priority projects:

Child Drowning — According to a recent study conducted by the CPSC, 416 people drowned in backyard swimming pools in 1986. Of these, 236 were under age 5. Another 3,000 children under 5 were treated in hospital emergency rooms for submersion accidents. The Iowa Department of Public Health (IDPH) is developing a new public information program on swimming safety in response to recently enacted legislation requiring more stringent requirements for public swimming pools.

Identifying and issuing recall or correction of potentially hazardous products — The CPSC has

(Continued next page)

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

authority to remove hazardous products from the marketplace under "Section 15" of the Consumer Product Safety Act (CPSA) and Section 15 of the Federal Hazardous Substance Act. Section 15 of the CPSA requires manufacturers, distributors and retailers to report potentially hazardous products to the CPSC. Since 1973, the CPSC (using Section 15) has initiated over 1,500 recalls or other corrective actions involving over 220 million products.

Playground Equipment — In 1987, an estimated 185,000 playground equipment-related injuries to children under age 15 were treated in hospital emergency rooms. Approximately 5,500 of these injuries required hospitalization. Each year, from 1980 through 1987, there was an average of 13 deaths on playground equipment. Analysis of accidents revealed deaths and incapacitating injuries (e.g., fractures, sprains, internal injuries, concussions) resulted from falls, hanging, head entrapment, being struck by moving equipment and contact with protrusions, pinch points and sharp points. More than 40% of the injuries in 1987 involved toddlers and preschool children.

The Consumer Federation of America and Nationwide Insurance Company support development of standards for playground equipment intended for children under age 5. Existing public playground guidelines and voluntary standards for home playground equipment need to be strengthened. All of these standards need to take into account the use of different types of materials. For example, wood preservatives containing carcinogenic substances should be restricted.

Cigarette Lighters — In 1986, 210 consumers died as a result of cigarette lighter fires: 170 of these deaths are attributed to fires started by children playing with lighters. These fires produced an average of 750 injuries per year. The annual cost of child play lighter fires is estimated at $300 to $375 million, or 75 cents per lighter sold. Cigarette lighters are particularly attractive to young children.

Children as young as 2 years old can use lighters to start fires. Parents and other care providers are often unaware children are able to do this.

The success of the poison prevention packaging act shows that making products child resistant can substantially reduce the number of children killed or injured. The Consumer Federation of America and Nationwide Insurance Company urges the CPSC to require that all disposable cigarette lighters be child resistant.

On-Site Investigations by IDPH

The Iowa Department of Public Health has established a compliance contract with the Consumer Product Safety Commission to conduct on-site investigations of possible substantial product hazards. IDPH will also check recall effectiveness at all levels of the distribution chain. And, IDPH will take part in testing of toys, rattles and pacifiers for small parts, sharp points and edges in accordance with all laws and rules of the Commission.

To request information or to report a product-related injury or hazardous product, call the U.S. Consumer Product Safety Commission's toll-free hotline from anywhere in the continental U.S. by dialing 1-800-638-2772. Operators are on duty Monday through Friday from 7:30 a.m. to 4:00 p.m. A teletypewriter for the hearing impaired is available on a special hotline number: 1-800-638-8270.

Iowa Certified Ophthalmic Dispensers

In accordance with Iowa Code section 153.A.7, it is the responsibility of the IDPH to send a list containing the names and addresses of each certified ophthalmic dispenser to each physician and surgeon, osteopathic physician and surgeon and optometrist licensed to practice in Iowa.

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1644 7th Avenue S.
Clinton IA 52732

Charles S. Hoops, #6
974 73rd Street, Suite 32
Des Moines IA 50312

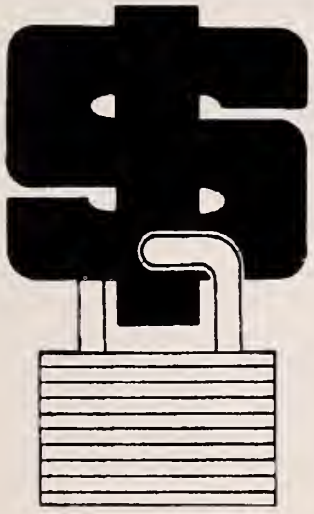
Henry D. Stromenger, #5
1921 Elm Circle
West Des Moines IA 50265

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- 10% annual withdrawal
- No medical underwriting — issue to 99
- 7 year disappearing surrender charge
- Guaranteed principal and interest

Medical News/Products and Programs

SIEMENS RECONFIGURES POPULAR MOBILETT X-RAY UNIT — Siemens Medical Systems, Inc. has redesigned the popular Mobilett x-ray unit for overhead use in trauma, emergency and intensive care units. The new configuration, called Mobilett XT, packages a powerful high-frequency x-ray generator and tube in a ceiling-suspended housing, allowing the system to move easily along an overhead track system from one examination bay to another. The ceiling-mount approach was developed as an alternative design for applications where floor space is severely limited. The Mobilett XT incorporates an 8.5 foot (2.6 meter) articulated arm for easy access to the patient and has been found to obtain projections faster than with conventional floor-based units. A hand-held remote controls all system movement and technical settings, exposure release and collimator lamp on/off. All cables are concealed within the arm to maintain an aseptic environment. Additional information on the Mobilett XT is available from Siemens Medical Systems, Inc., Roentgen Systems Division, 186 Wood Avenue South, Iselin, New Jersey 08830.

WAMPOLE LABORATORIES, A DIVISION OF CARTER-WALLACE INC. HAS ANNOUNCED THE AVAILABILITY OF THE FOLLOWING — 1) Newly improved latex slide test for rapid detection of Group B streptococcus antigen in cervical and vaginal swabs; 2) Lyme (B. burgdorferi) ELISA test systems; 3) Hormone receptor assay (estrogen and progesteron) to aid breast cancer management; 4) The Bactigen® Meningitis product line which offers a simple and rapid procedure for the detection of H. influenzae type b, N. meningitidis A/B/C/Y/W135, S. pneumoniae and Group B Streptococcus antigens directly from blood culture fluid; 5) New Mouse Kidney antinuclear antibody test system.

Mouse Kidney sections are preferred by some laboratories for their ability to simutaneously determine the levels of nuclear (ANA), mitochondrial (AMA) and smooth muscle antibodies (ASMA). The Mouse Kidney sections possess structures such as proximal and distal tubules and arteries containing antigen sites that will permit specific autoimmune antibodies such as ANA, AMA, or ASMA to bind these sites. For example, mitochondrial antibodies in patients sera will bind to the mitochondrial antigens localized in the distal tubular epithelium.

LIQUID BARIUM INTRODUCED IN UNIT-DOSE DISPENSING BAG — Houston Biomedical, Inc. and Smith & Nephew Diagnostics, a leading producer of x-ray contrast media, have announced the introduction of Quick C. Quick C is a high performance concentrated suspension of liquid barium sulphate. It is specifically formulated to provide reliable, totally reproducible coating of the colon for double contract studies of the large bowel. Quick C is provided in a patented unit-dose laminated bag that will not tear or leak and is the only reliable liquid in a bag dispensing system available. The Quick C package contains everything required for dispensing the product — the unit-dose barium in a bag, infusion set and enema tip, a bag for disposal of accessories and towelette unit. Preparation is fast and simple. Place the bag containing the concentrated barium on a flat surface, unscrew the top, add the desired amount of water for the ideal w/v and gently massage. The concentrated liquid Quick C readily adapts to different rates of dilution to meet the radiologist's requirements. For complete information and descriptive literature, contact Houston Biomedical, 1440 Lake Front Circle Drive, Suite 180, The Woodlands, Texas 77380, 713/363-0300 or toll-free 1-800/662-1777.

***PASSY-MUIR TRACHEOSTOMY SPEAKING VALVE AVAILABLE FOR IN-LINE USE** — The valve offers ventilator dependent patients the opportunity to speak without having to wait for the ventilator to cycle, allowing patients to speak during inspiration and expiration without interruption. An additional benefit of the valve is redirection of airflow in the oral and nasal chambers to evap-*

(Continued page 501)

Hyperbaric Oxygen Therapy



Mercy Hospital Medical Center offers hyperbaric oxygen (HBO) therapy that enables you to treat patients suffering from slow-healing wounds. The therapy is oxygen applied under high pressure in a four-foot by eight-foot cylinder called a hyperbaric chamber.

When pure oxygen is administered at two to three times the normal atmospheric pressure, the amount of oxygen dissolved in the blood can be increased as much as 20 times. The increased pressure elevates oxygen concentration in and near capillaries and helps force oxygen deeper into tissues.

HBO therapy is used to treat patients who suffer from carbon monoxide poisoning, smoke inhalation, chronic osteomyelitis, gas gangrene, decompression sickness, radiation necrosis, and it will enhance the recovery of slow-healing wounds.

Hyperbaric oxygen therapy is offered as a referral and consultation service only. While undergoing treatments, patients remain under the primary care of the referring physician. Out-of-town patients may be referred to an appropriate local physician at the discretion of the referring physician.

The unit is open seven days a week, 24 hours a day. Monitoring capabilities exist for critically ill patients. If patients require emergency transport, Mercy's air ambulance service — Air Life — is available.

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orate secretions which usually dramatically reduces the amount of suctioning required. Call or write for a free video demonstration tape: Passy & Passy, Inc., 4521 Campus Drive, Suite 273, Irvine, California 92715, 714/856-2634 (California) or 1-800/634-5397.

PATIENT IN NEED® PROGRAM EXPANDED — Since the Searle Patient In Need® program was launched in 1988, G.D. Searle and Company has made widely used drugs for the treatment of heart disease available at no charge to those patients who could not otherwise afford them. Since then, more than 65,000 indigent patients have redeemed 200,000 certificates each good for a month's supply of medication. Searle recently announced it is expanding the program by adding Cytotec®, a new anti-ulcer medication used by arthritis patients. People with arthritis and heart disease will benefit from the program. Searle estimates physicians will distribute an additional 600,000 certificates this year. Physicians are urged to assist in this program to provide medication to our nation's needy. Questions can be answered by calling the toll-free number, 1-800/542-2526.

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

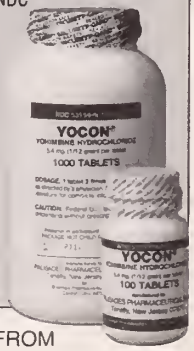
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



References:

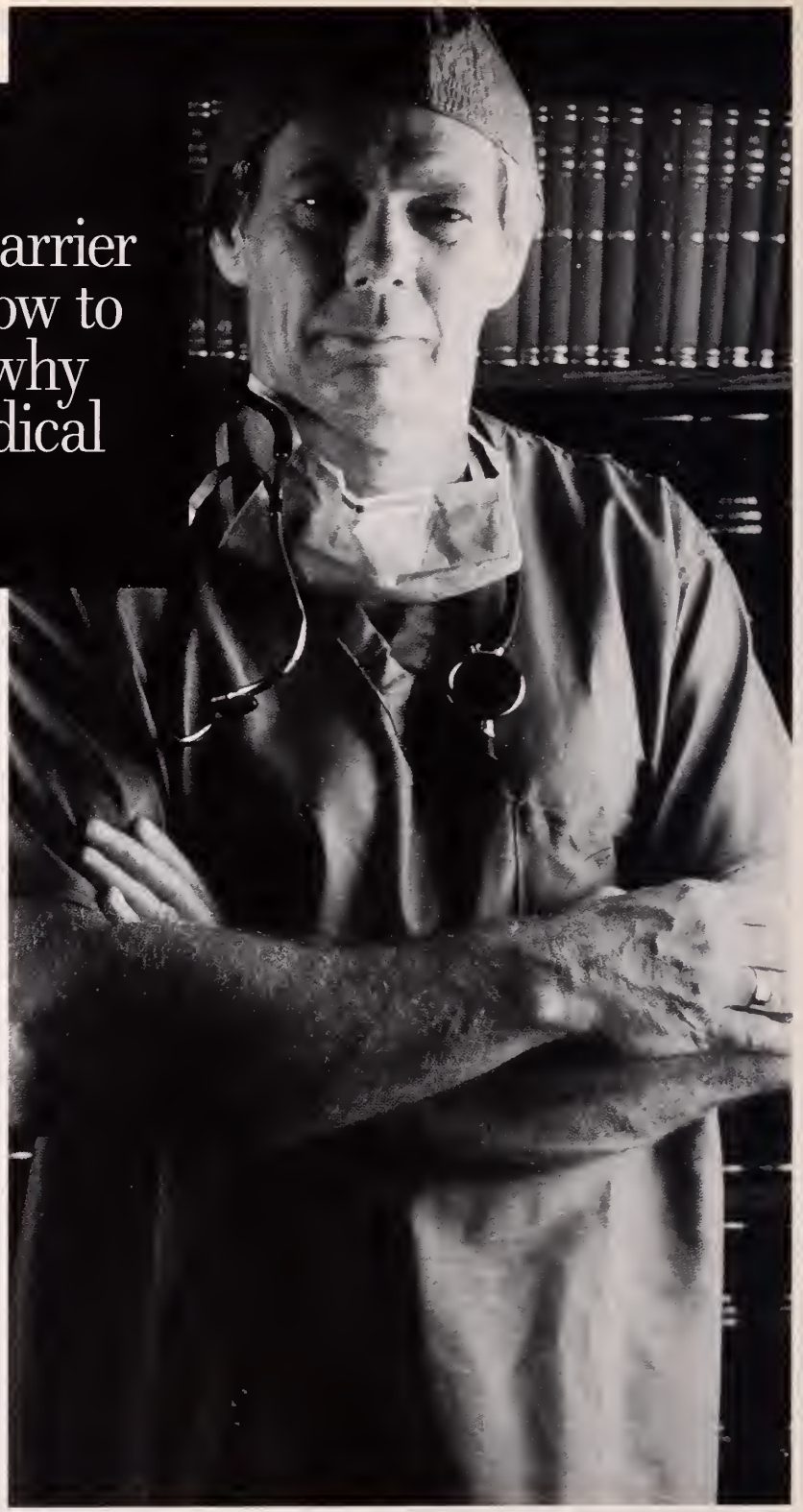
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2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
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About Iowa Physicians

Two physicians have joined the staff at the Park Clinic in Mason City: **Dr. Rajinder K. Verma,** department of neurology and **Dr. Brent E. Brunsting**, department of family practice. Dr. Verma received the M.D. degree from Guru Nanak University Medical College, Amritsar, India and completed his residency at the University of Kansas Medical Center, Kansas City, Kansas. Dr. Brunsting received the M.D. degree from the U. of I. College of Medicine and served his residency at St. Joseph Mercy Hospital, Mason City. **Dr. Titte S. Krishnaswamy** has joined the Swayze Clinic in Muscatine. Dr. Krishnaswamy received the M.D. degree from Jawaharlal Institute of Postgraduate Medical Education, Pondicherry, India and served his internal medicine and cardiology residencies in Newark, New Jersey. **Dr. Richard Pretorius** has begun medical practice at Pioneer Medical Center, Rock Rapids. Dr. Pretorius received the M.D. degree from the University of Virginia School of Medicine, Charlottesville, Virginia and served his family practice residency at Case Western Reserve University, Cleveland, Ohio. **Dr. Garfield Miller** has retired after 35 years of practice in Calmar. Dr. Miller received the M.D. degree at Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina. **Dr. Garo A. Chalian** has retired after practicing medicine in the Clinton area for 28 years. Dr. Chalian

(Continued next page)

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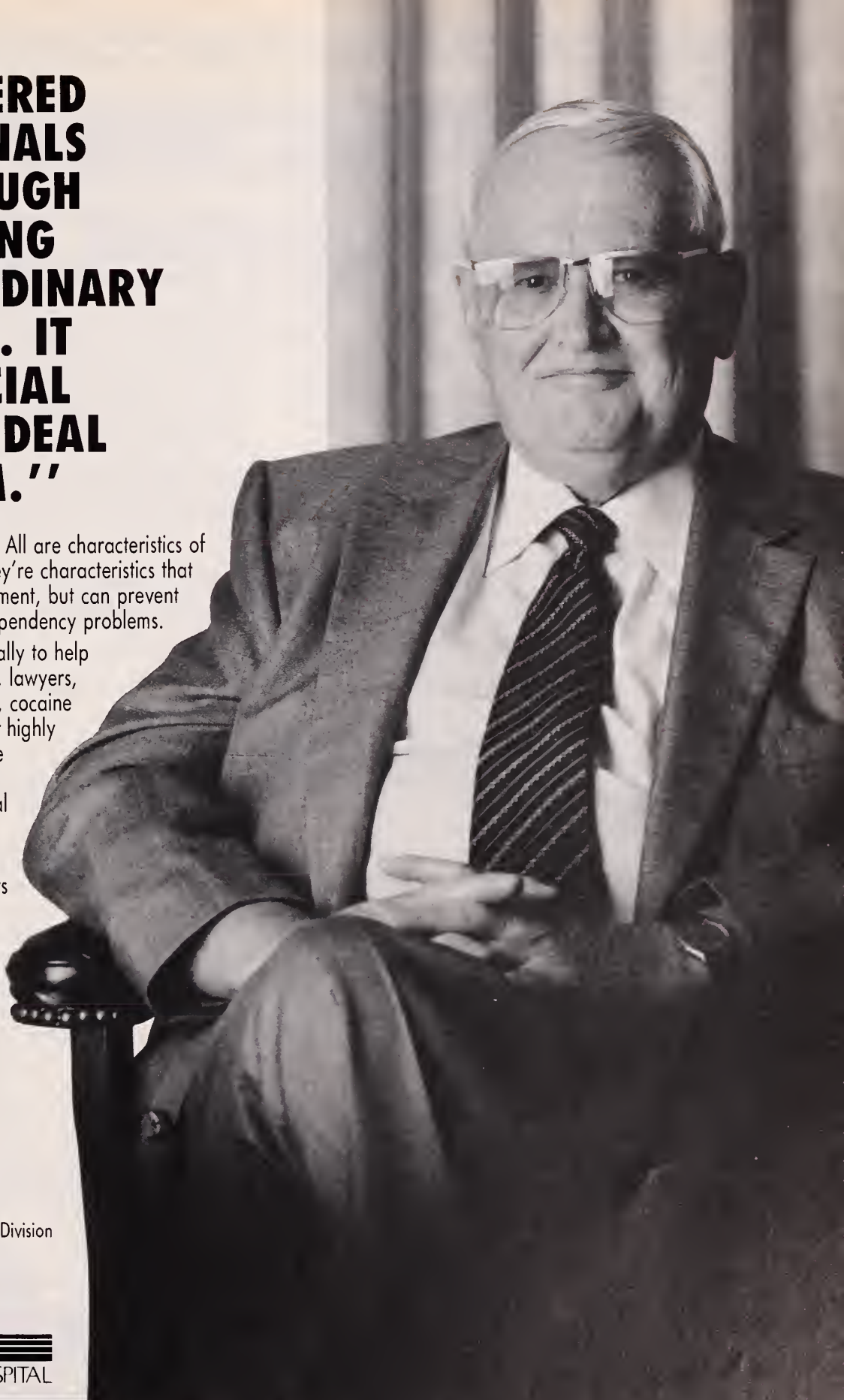
received the M.D. degree from the Medical School, American University of Beirut, Beirut, Lebanon and completed a residency at Grady Memorial Hospital, Atlanta, Georgia. **Dr. David R. Ulstad** has joined the staff of Mason City Clinic. Dr. Ulstad received the M.D. degree at the U. of I. College of Medicine and served his internal medicine residency at Iowa Methodist Medical Center, Des Moines. **Dr. Albert Halls** has joined **Drs. William Shelton** and **Bill Richardson** at the Clarinda Family Practice Clinic. Dr. Halls received the M.D. degree from Creighton University School of Medicine, Omaha, Nebraska. **Dr. Robert Corry**, professor and chairman of the U. of I. College of Medicine's department of surgery, was recently elected president of the board of directors of the United Network for Organ Sharing. Dr. Corry, director of the U. of I.'s organ transplant service, was elected at the organization's annual meeting in Arlington, Virginia. **Dr. Mark Mahoney** has begun family practice in Mason City. Dr. Mahoney received the M.D. degree from the U. of I. College of Medicine and completed his residency at Mason City Family Practice. He has been an emergency room physician at St. Joseph Mercy Hospital in Mason City for 2 years. **Dr. Guy H. Posey**, emergency physician at St. Luke's Regional Medical Center, Sioux City, was recently recognized by Western Iowa Tech Community College for his service with the Emergency Medical Services Community in the Siouxland area. **Dr. Curtis W. Rainy** has retired after 35 years of medical practice in Elma. Dr. Rainy received the M.D. degree at Vanderbilt University School of Medicine, Nashville, Tennessee and completed a residency at St. Luke's Hospital in Cedar Rapids.

Dr. Jeff Knerl and **Dr. Larry Hansen** have joined the Grandview Medical Clinic in Sioux City. Dr. Knerl received the M.D. degree at Creighton University School of Medicine, Omaha, Nebraska and previously practiced in Estherville. Dr. Hansen received the M.D. degree from the University of Nebraska College of Medicine, Omaha, Nebraska and recently completed the Sioux City family practice residency program. **Dr. James Brooks** has begun practice in Fairfield. Dr. Brooks was formerly clinical director of the Mental Health Institute in Mount Pleasant and also practiced privately in Ottumwa. **Dr. Carla Schulz** has joined **Dr. Sheila Sawyer** in family practice in Cedar Rapids. Dr. Schulz received the M.D. degree at the U. of I. College of Medicine and recently completed a residency from Cedar Rapids Medical Education Program. **Dr. James A. Maroc** has been named vice president of medical affairs at the Iowa Foundation for Medical Care, West Des Moines. Dr. Maroc had been the director of medical affairs since 1983. **Dr. Jeff Allyn** has joined **Drs. Steven Sohn** and **Kurt Klise** at the Heartland Clinic in Perry. Dr. Allyn received the M.D. degree from Tulane University School of Medicine, New Orleans, Louisiana and served his residency at Broadlawns Medical Center, Des Moines. He previously practiced in Vinton.

Dr. Sherman A. Williams has joined the practice of **Dr. Garrett Ridgley** in Burlington. Dr. Williams received the M.D. degree from the University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania and completed his internship and residency at U. of I. Hospitals and Clinics. **Dr. Russ England** has begun practice in Fairfield. Dr. England is also clinical director at the Mental Health Institute in Mount Pleasant. **Dr. Richard C. Mauer** has begun practice at Cedar Valley Ophthalmology in Waterloo. Dr. Mauer received the M.D. degree from the U. of I. College of Medicine and served an opthalmology residency at Kresge Eye Institute of Wayne State University in Detroit, Michigan. Prior to locating in Waterloo, Dr. Mauer practiced at Southland Eye Clinic in Taylor, Michigan. **Dr. Bryce Robison** has joined **Drs. Harry Robison** and **Carleton Helseth** at Peters Park Medical Clinic in Sioux City. Dr. Bryce Robison received the M.D. degree at the U. of I. College of Medicine and recently completed the family practice residency program of the Siouxland Medical Education Foundation. **Dr. Kevin Locke** has joined the staff of Medical Associates of Decorah. Dr. Locke received the M.D. degree from the U. of I. College of Medicine and completed a residency at Broadlawns Medical Center, Des Moines. Two former Iowa physicians have returned to Waterloo to practice together: **Dr. Stephen Paulk** and **Dr. Richard Waldorf**. Dr. Paulk practiced in the Phoenix, Arizona area for about 6 months of this year, returning to Covenant Medical Center this summer. Dr. Waldorf retired from his Waterloo practice 2

(Continued page 506)

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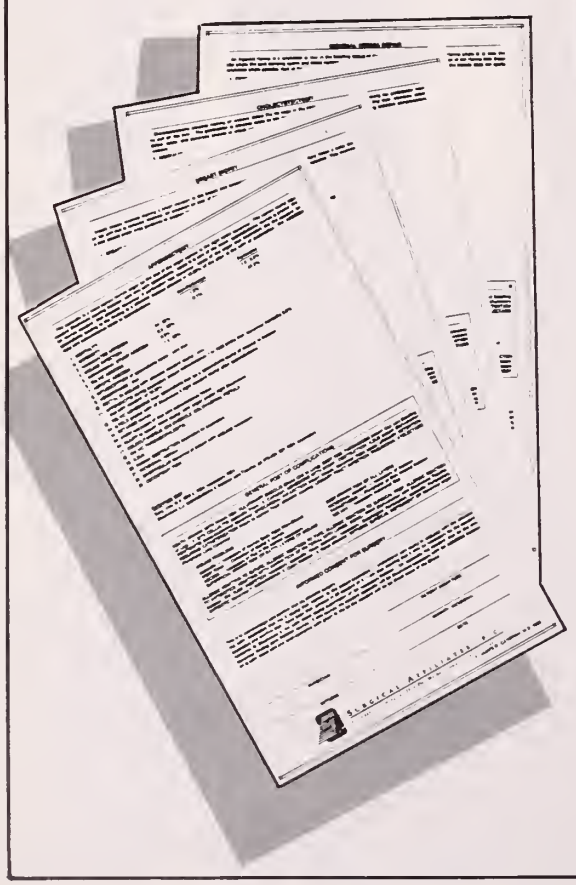
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years ago, moved to South Dakota and has now rejoined Covenant Medical Center. **Dr. Matthew Whitis** has joined the staff at Family Medical Center in Oskaloosa. Dr. Whitis received the M.D. degree from the U. of I. College of Medicine and completed his family practice residency at St. Joseph Mercy Hospital, Mason City. **Dr. Alan Swearingen,** a Bettendorf family practitioner, has been named director of medical affairs at St. Luke's Hospital, Davenport. Dr. Swearingen replaces **Dr. Robert J. Foley** who has retired after almost 16 years of service to the hospital. **Dr. Wayne Conover** has joined the pediatric staff at Iowa Methodist Medical Center, Des Moines. Dr. Conover received the M.D. degree from University of California — San Diego School of Medicine, La Jolla, California. Prior to locating in Des Moines, Dr. Conover was director of maternal and fetal medicine at the University of Kentucky Medical Center. **Dr. Randall Butikofer** has joined the staff at the Cresco Medical Center. Dr. Butikofer received the M.D. degree at the U. of I. College of Medicine and served his family practice residency at Phoenix Baptist Hospital, Phoenix, Arizona.

Deaths

Dr. Conan J. Peisen, 86, Des Moines, died August 8 at his home. Dr. Peisen received the M.D. degree at the U. of I. College of Medicine and practiced in Des Moines until his retirement in 1977. He was a life member of the Iowa Medical Society.

Dr. Dianna Eddy Van Orden, 57, Iowa City, died August 5 at U. of I. Hospitals. Dr. Van Orden received the M.D. degree from Northwestern University Medical School, Chicago, Illinois and completed a residency at Yale Medical Center. She was a full professor of obstetrics and gynecology at the U. of I. College of Medicine.



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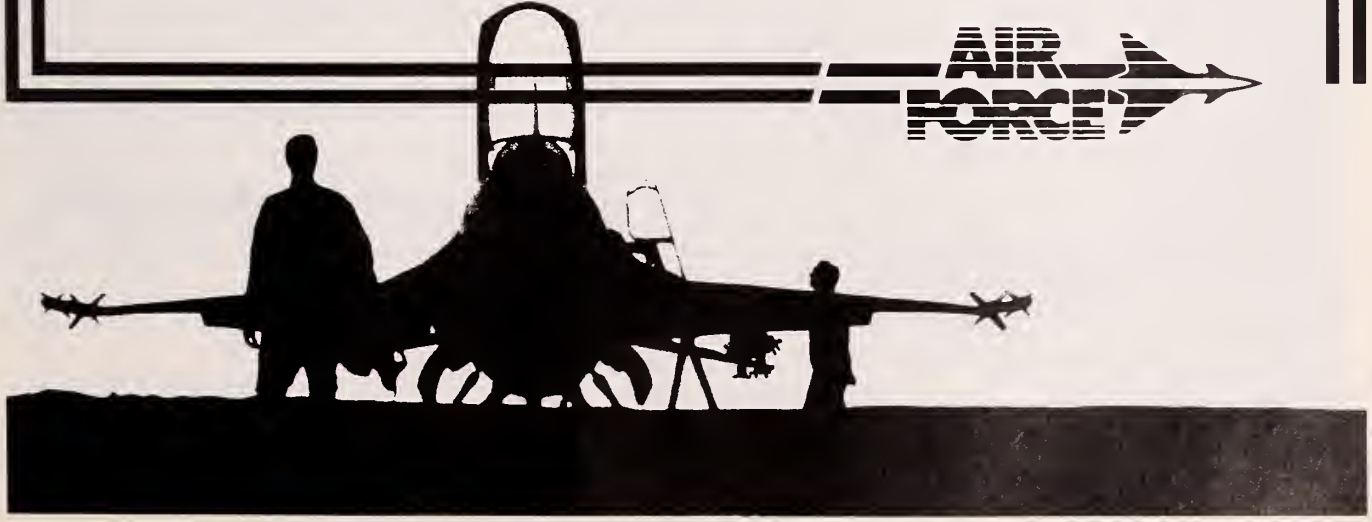
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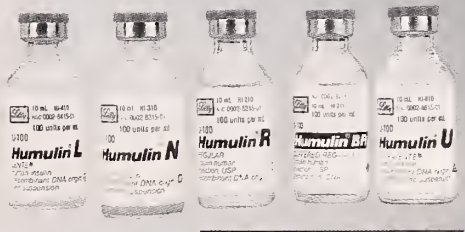
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Don't Ration Medicare Payments

(Editor's Note: This is an excerpted version of an editorial by James Sammons, M.D., executive vice president of the American Medical Association, which first appeared in the June 29, 1989 Washington Post.)

NO ONE SHOULD QUARREL with the idea of controlling Medicare costs, but the proposal to impose expenditure targets (ETs) on Medicare payments is plain wrong. The idea of capping the total amount available each year is a "solution" that would work a greater hardship on patients than on their physicians by severely restricting their access to necessary medical services.

What Congress and the administration are talking about is rationing. But demand for health care is growing, and coupling that demand with shrinking resources would put an unbearable pressure on physicians to do less for patient welfare. Under expenditure targets, the government would be asking physicians to figure out how not to treat their patients instead of how to treat them — a situation physicians can never accept.

By any name, expenditure targets are simply an attempt by Congress and the Bush administration to balance the budget on the backs of America's elderly.

The real message of ETs is that the government cannot control the Medicare program. Instead of reasoned approaches to specific problem areas, the government is throwing up its hands and abdicating responsibility to a process that has not been well thought out, let alone tested.

The American Medical Association believes that practice guidelines would be more appropriate — and more effective — than expenditure targets in controlling physician charges. Although the number of practice guidelines in existence today is small compared with the future need, there are enough of them to demonstrate their usefulness in reducing the cost of medical care.

For example, the National Institutes for Health conference held in 1980 issues guidelines for the management of febrile seizures in children. The NIH estimates savings resulting from the use of these guidelines at $67 million per year.

Following the 1981 publication of guidelines on the appropriate use of tonsillectomy, the number of tonsillectomies performed nationally fell from 392,000 in 1981 to 249,000 in 1987, a 36% reduction. Feedback to Vermont physicians regarding their tonsillectomy rates in children 14 years and younger led to an 89% reduction in tonsillectomies over a 5-year period.

A 1985 Chicago hospital program of practice guidelines for the appropriate use of Cesarean section operations led to a reduction from 16.7% to 11.5%. A similar reduction nationally could result in a savings of approximately $1 billion per year.

The AMA is committed to working with Congress to address budget requirements, while maintaining the promise of the Medicare program made to the elderly 26 years ago: guaranteed access to health care services. Physicians will not abandon their role as the patients' advocate in order to provide the government a quick and dirty fix to a budget problem that the elderly did not create.

October 1989

Iowa Medicine

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(ENALAPRIL MALEATE) MSD

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure, patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction, rhythm disturbances; atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings.

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown). In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension.* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia. In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD Representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486. J6VS18R2(817)

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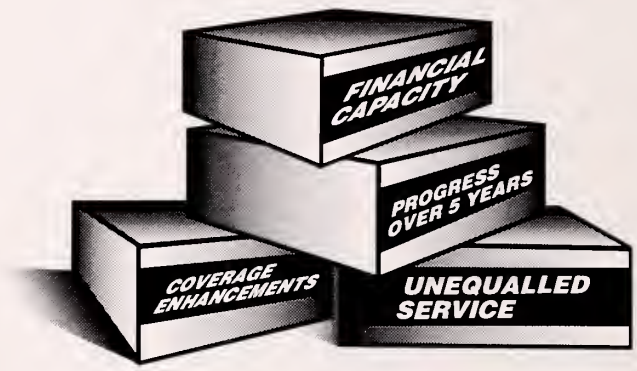
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OTOLARYNGOLOGY



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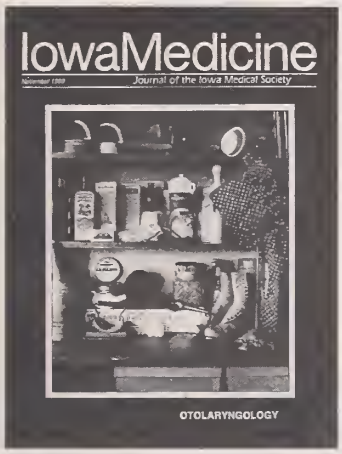
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Donald F. Rodawig, M.D.

President's Privilege



We'd Better Start Talking

SEVERAL WEEKS AGO, I WAS one of several IMS physicians who met with all 8 members of the Iowa Congressional Delegation. What we learned is disturbing.

It appears neither the Administration nor Congress has plans to develop a coherent health policy. All decisions at this point are budget driven and are being made by the Office of Management and Budget rather than the Department of Health and Human Services.

Apparently, Congress is increasingly frustrated by the elderly's demands for Medicare services without paying for them. A good example is the repeal of the Catastrophic Health Care bill in response to pressure from elderly groups. Increasingly, the president and Congress are blaming hospitals and physicians for the health care cost problem.

Rather than develop new ideas, lawmakers are looking to Canada for solutions to the problem of health care cost and the uninsured. The business community is also beginning to advocate this approach.

Obviously, there are short and long term challenges facing physicians. If the Administration and Congress continue the current patchwork budget driven approach to managing the health care crisis, we are headed for national health insurance by default.

It is up to the American Medical Association and its members — you and me — to step into the vacuum created by the Administration and Congress. The AMA has developed a comprehensive plan to revamp Medicare so each generation pays for its own care; make Medicare coverage uniform in all states; and, with caveats, require employers to provide coverage to their employees.

However, success is dependent on cost control which must come from us, practicing physicians, not the government. AMA is also developing practice parameters to help physicians determine appropriate approaches to treatment.

I urge physicians to begin by talking to their patients, who may not understand the drawbacks of a system such as that adopted by the Canadian government.

There is much we can do. We can explain to our patients the implications of rationing and ask them to tell their lawmakers they oppose expenditure targets. We can ask them to tell their federal lawmakers of their frustration with the lack of leadership on health care policy. We can warn them of the dangers of developing health care policy on the basis of short term budget concerns.

Only when patients recognize they are in this crisis with us will we be successful in addressing the health care dilemma.

Donald F Rodawig MD

Donald F. Rodawig, M.D.
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More About the Cover

THIS MONTH'S COVER, A PHOTOGRAPH taken by Miriam Dunlap of Living History Farms, depicts items which could be found in a general store over a century ago. The shelves contain a mixture of typical general store items plus certain "medical" items. Take another look at our cover and see what you could have purchased in 1875 . . .

- Patent medicines: Almost all were alcohol based, some up to 44%!
- Wooden mortar and pestle.
- Bottle corker (middle shelf, right): Some general store proprietors had their own patent medicine bottle.
- Sassafras bark (bottom shelf, right): This was made into tea for a summertime "tonic."
- Invalid feeders: Simple (bottom shelf, left) and heated (middle shelf, right) which used long-burning candle.
- Ear horn/trumpet (bottom shelf, center): Invented in England by Dr. Yardsley, 1848.
- Spectacles (bottom shelf, center): Bought in general store, dark glass traced to 1870.
- Shoes: "Straights" (no difference in right and left shoes) made up until 1880s. Right/left shoes were invented in 1820 but didn't become popular until 1860s.
- Baby bottle (middle shelf, center): This type of baby bottle was sold in the U.S. until 1910. The rubber tubing could not be cleaned easily and infants died from resulting diarrhea.
- Rock candy (bottom shelf, center): This was mixed with 1/2 pint whiskey, allowed to stand overnight and used as a cough syrup.
- Corsets: Prior to 1875, corsets were laced so tightly that a woman's rib cage became deformed as she grew. Corsets were worn from early teen years.

(The above information was supplied by Art and Ermadene Dickey of the General Store at Living History Farms.)

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What's New in Otolaryngology?

WILLIAM MCMILLAN, M.D.
Ottumwa, Iowa

The author discusses advances in the practice of otolaryngology, focusing on diagnosis and surgical techniques. New requirements for physicians are also discussed.

Editors' Note: This is the first in a series of issues focusing on various specialties. We would like to thank the Iowa Academy of Otolaryngology and its president, William McMillan, M.D., for providing much of the material for this month's journal.

THE FIELD OF OTOLARYNGOLOGY has seen dramatic advances in the ability to diagnose the type and extent of head and neck disease using MRI and CT scans. Other significant advances include thin needle aspiration of neck masses for diagnosis of tumors, endoscopic sinus surgery, cochlear implants for the profoundly hearing impaired and digitally reprogrammable hearing aid devices for the moderately hearing impaired with discrimination problems.

Most changes in treatment protocol and technology result in lower morbidity and increased use of outpatient facilities. This is a plus for patient care; however, it significantly increases demands on physician time for follow up and outpatient management. More post graduate education to learn the new skills necessary to appropriately use this new technology is also needed.

The author is president of the Iowa Academy of Otolaryngology and practices in Ottumwa.

New Surgical Techniques

Endoscopic sinus surgery of the paranasal sinuses is the result of development of high resolution endoscopy similar to, but smaller than, that used in orthopedics or urology. It is based on the concept that almost all sinus disease starts from the osteomeatal complex. This is the space lateral to the middle turbinate with openings into the frontal, maxillary, ethmoid and sigmoid sinuses.

This relatively small osteomeatal outflow tract can become blocked due to polypoid changes in the sinus, allergic disease and/or chronic thickened mucosa. This can lead to chronic sinusitis, nasal obstruction and chronic purulent drainage from all the sinuses.

Microscopic and endoscopic techniques are used to remove only diseased ethmoid cells and open the osteum of the maxillary, frontal and sphenoid sinuses. Because of the ability to do delicate, limited exoneration of the ethmoid sinuses and middle meatus, a procedure which once required a 3-4 day admission can often be done on an outpatient basis with much less pain, bleeding and morbidity. The technique requires the physician to gain a new indepth knowledge of the fine, complicated anatomy of the paranasal sinuses and develop skill using monocular scopes in 3 or 4 different degrees of deflection.

Although this technique has been used

in Europe for the last 15 years the "standard operation" in America is still being developed. The importance of formal hands-on training in the technique is stressed by its proponents. It has been shown that surgeons only beginning the method may have a higher rate of complications such as CFS leak and occular injury, or postoperative hemorrhage.

Recently a surgical technique using both direct binoccular vision with a fiberoptic headlight and macroscopic view was reported. A series of 170 successful cases combining the European and American approach demonstrated "secure endoscopic sinus surgery" can be preformed as a safe adjunct to other indicated functional nasal surgery.

New Uses For Lasers

We continue to find new applications for lasers in otolaryngology. For many years multiple laryngeal lesions have been removed with less trauma, using CO_2 and later Argon lasers. The results were generally better than the cord stripping procedures previously done. It is now known the vibration of the mucosa overlying the vocal cord is a major contributor to quality of phonation. The less traumatic laser surgery is being matched by careful microscopic procedures with dissection and preservation of vocal cord mucosa from around benign lesions.

Lasers are also being used to cut out portions of the stapes fixed by otosclerosis, prior to placement of a stapes prosthesis, to re-establish a mobile ossicular chain. Again, the technique requires special training with the high tech lasers and increased expense for purchase and maintenance. Although primary results were good, there is some concern regarding utriculosaccular damage by the heat of the laser. Investigations are now being done which confirm some post-operative changes in these organs in guinea pigs. This technique is still being investigated and is not widely accepted at this time.

Lastly, with the coming of the information age, video discs are being developed to allow at-home, interactive programs where physicians actually experience exotic or difficult cases. Also, patients can be taught by video tapes how to stay healthy and what happens with certain diseases. Physicians can avoid routine repeated explanations of common disease processes and the patients seem to be pleased.

'Most changes in treatment protocol and technology result in lower morbidity and increased use of outpatient facilities. This is a plus for patient care; however it significantly increases demands on physician time.'

Computerized medical record documentation with automatic alarms and information on drug interactions, diagnostic and therapeutic decision trees, standardized severity of illness measurements and degree of health measurements will greatly improve the standards of health care and can be used as a large scale measurement of treatment efficacy.

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William McMillan, M.D.

Questions and Answers



Otolaryngologists Stress Education

The author, an otolaryngologist in Ottumwa and president of the Iowa Academy of Otolaryngology, discusses that organization's goals and the current practice environment for otolaryngologists.

Is there a surplus or shortage of otolaryngologists?

Otolaryngologists represent 1.4% of American physicians. Our specialty is growing, but at a much slower rate than most specialties. Twice as many medical students, however, apply to enter otolaryngology residency as can be accommodated. At last count 56 otolaryngologists were practicing in Iowa, 7 on staff at the University of Iowa. It is generally thought the total number of ENT physicians is adequate but there may be some maldistribution of physicians.

Manpower studies done several years ago indicated in the 1990s there would be an oversupply of otolaryngologists. We haven't seen that in Iowa, but there is a significant increase in the number of physicians on the coasts. Some modest reduction in the size of residency programs has been made over the last 10 years. Whether this trend continues will depend on many factors, including acceptance of "cosmetic surgery" as a specialty and certain forms of allergy treatment performed by many otolaryngologists.

What are the objectives of the Iowa Academy of Otolaryngology?

The Iowa Academy of Otolaryngology is primarily interested in educating members and their patients. Otolaryngologists seek to educate the public regarding injurious lifestyle habits. These include cigarette smoking, smokeless tobacco, noisy work environments and loud music (especially through earphones) which lead to hearing impairment. Recently, the academy conducted a "Through with Chew" campaign.

The Academy provides an ideal forum to discuss geographic differences in practice that can be revealed by small area analysis. It has been a good platform to discuss local or state wide peer review. New trends in outpatient versus inpatient treatment have been discussed. New techniques of treatment are presented and critiqued. Occasionally a political question will be posed but no organized attempts have been made to lobby for our special needs.

We hope to continue to educate ourselves, our referring physicians and our patients using public campaigns, contributions to research and interactive computer programs now being developed in the National Medical Library.

What are the concerns of otolaryngologists regarding practice environment?

Otolaryngologists are concerned that factors outside their control are causing change. Many third party payers demand detailed accounts of proposed treatments prior to allowing reimbursement, which doubles paperwork. Occasionally the doctor patient relationship is disturbed due to inappropriate review decisions. Managed health care may introduce short term noncomprehensive service regimes by the participating physicians to meet capitation requirements. Another problem is excess testing and documentation to avoid lawsuits.

The perception the government must control the amount of money Americans spend on health care leaves many physicians fearing increasing government regulation. Some otolaryngologists feel we are insulated because most of our procedures can be done on an outpatient basis and would therefore avoid further review. However, government plans for evaluating intervening care for Medicare patients are establishing protocols for in-office review of patient care.

What is the effect of HMO and Medicare regulations on care given by otolaryngologists?

HMO's were created at a time when utilization of hospitals could be reduced up to 40% using strict peer review. Now the hospital census is lean and mean, with few diagnostic or marginal admissions. Outpatient medical office practice peer review cannot have the same effect when care is patient initiated. The increased office practice created by strict hospital review and more outpatient utilization raises the demand for physician time. This strains our rural system where there are already not enough "physician hours" in the day.

Otolaryngologists treat both as primary physicians and referral source specialists, but we are disturbed by HMO "gate keeper" mechanisms that tend to increase the referral threshold. A timely referral is an overall savings and can increase the quality of life for the patient.

This "penalty for referral" system offers monetary incentives for limiting care and makes the physician the patient's keeper instead of the patient's advocate. It is unfair to ask a doctor to decide whether his patient is "healthy enough." This denies patient access to a higher level of care for monetary reasons and leaves the physician in a precarious legal position.

Instead of allowing meaningful regulation through peer review, the government seems determined to reduce all care to minimum standards being developed under the guise of quality of care guidelines. Although the developers deny they are telling physicians how to practice, today's malpractice environment will make any "sanctified" set of standards the "safe minimum" for a certain diagnosis. "Cookbook" medicine will use this "safe minimum of treatment" to achieve HMO capitation or government expense targets.

How has new technology (instruments, lasers) affected practice?

New technology is expensive initially and drives up cost, but in the long run it means care with fewer complications and less hospitalization. Earlier noninvasive diagnosis will save dollars. However, we must accept the reality that better acute care intervention leads to an older population with chronic health care needs that become more expensive to treat. To effectively limit the rise in health care costs we need to limit technology, but this solution is acceptable to very few Americans.

The new technology (instruments, lasers, computer programs, endoscopes, better noninvasive diagnostic techniques, safer general anesthesia) that can be done routinely on a same-day basis mean a shift from hospital to outpatient care. This means increased services provided by the physician in his office and competition by hospitals for outpatient services. Increased pressure to practice the same high quality, highly technical, very expensive medicine on an outpatient basis raises part B Medicare costs. Overhead costs and the investment in highly trained personnel are significantly higher. In a time of very small increases in actual payments to physicians, physicians are forced to compromise levels of care often creating dissatisfaction with practice and lawsuits.

Physicians are more able to change the course of disease than ever before. New diagnoses and treatments are being discovered daily. It is a period of great change and we as a profession are continually challenged. All in all, the practice of medicine is still extremely satisfying.

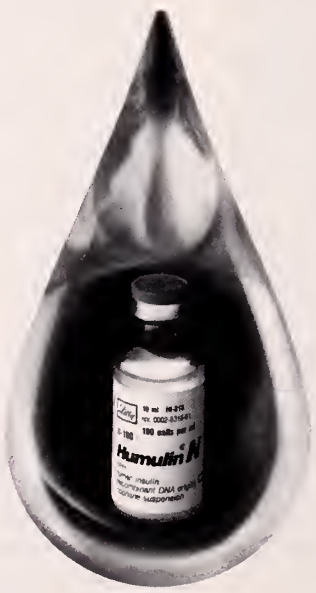
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Nasal Obstruction Portending Nasal Cavity Cancer

DOUGLAS DAWSON, M.D.
ROBERT BURGESS, M.D.
Iowa City, Iowa

This report demonstrates why all patients presenting with persistent nasal obstruction should be completely evaluated because of the difficulty in diagnosing nasal chamber tumors.

NASAL OBSTRUCTION AND DISCHARGE are often symptoms of a wide variety of infectious, inflammatory and allergic diseases. They are present in nearly all individuals at some time in their lives and hence offer little specificity for the clinician. In addition, few general clinicians are comfortable with normal nasal anatomy or conduct a routine physical examination of the nose. This is a case report of nasal obstruction and discharge lasting 5 months, unilateral in nature and heralding the appearance of neuroendocrine carcinoma of the left nasal cavity. The report underscores the difficulty in diagnosing nasal chamber tumors and typical treatment regimens of these rare tumors.

The authors are associated with the Department of Otolaryngology-Head and Neck Surgery, U. of I. Hospitals and Clinics. Dr. Dawson is the director of the Division of Head and Neck Oncology in that department.

Case Report

In November 1988 a 30-year-old white female came to the Montana State University Student Health Service with a 5-month history of increasing nasal congestion. She was on no medications and had a past history only of carcinoma in situ of the uterine cervix. After successive trials of antibiotics and decongestants, she was referred to a local otolaryngologist who found the patient to have a polypoid mass occupying much of the left nasal airway. The patient underwent removal of the left nasal mass with a left anterior ethmoidectomy.

The patient was referred to University of Iowa Hospitals and Clinics in December 1988 with a chief complaint of nasal drainage. On physical exam, no visible lesions were noted of the nose, nasopharynx, oropharynx or oral cavity. A head CT scan revealed obstruction of the left sphenoidal sinus outlet with a small mass in this area.

In January 1989, nasal endoscopy, a lateral rhinotomy, a medial maxillectomy and completion ethmoidectomy with a wide sphenoidotomy were performed. On nasal endoscopy a nonfriable polypoid mass was noted near the rostrum of the sphenoid sinus with the remainder of the exam normal. During the pro-

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cedure the polypoid mass was noted to extend from the sphenoid rostrum along the nasal septum between the posterior ethmoid area and the nasal septum. No bony erosion was seen. The procedure was well tolerated and the patient was discharged on the third postoperative day. She received 6,000 rads to the involved area on an outpatient basis.

The patient came to a South Carolina hospital in June 1989 with complaints of nausea, vomiting, an unsteady gait, a 6th cranial nerve palsy and paraesthesia of her right lower lip and tongue. An MRI revealed abnormal enhancing lesions in both cerebellar hemispheres and temporal lobes. An LP was negative for cytology. She was started on steroids and transferred to the University of Iowa.

The initial impression on admission was the patient suffered from metastatic disease to the brain. A repeat MRI and review of her x-rays suggested the lesions were due to radiation necrosis. The patient improved on steroids alone and remained in the hospital 4 days. She was sent home on steroids and has continued to improve without evidence of recurrence.

Discussion

Neuroendocrine carcinoma of the paranasal sinuses are rare, malignant neuroblastic tumors.[1] They were first described by Berger et al as esthesioneuroblastomas and were characterized as uncommon tumors of the nasal cavities that have evidence of olfactory differentiation.[2] Since this initial description in 1924, several synonyms have been used including olfactory neuroblastoma, esthesioneuroepithelioma, olfactory esthesioneuroma, intranasal neuroblastoma, olfactory placode tumor, neural olfactory tumor and neuroendocrine carcinoma.[3-5] The latter more descriptive term was proposed in a new classification of nasal cavity tumors by Silva et al in 1982. It is felt this new classification is more clinically relevant in regard to age of occurrence and biologic behavior.[5]

The basis of the new classification scheme by Silva was the clinical relevance in regard to age of occurrence and the tumors biological behavior. A bimodal age distribution has been noted for these tumors with the mean ages for neuroendocrine carcinomas and neuroblastomas as 20 and 50 years, respectively. Neuroblastomas with olfactory differentiation have been reported to have a greater incidence of metastasis; however neuroendocrine carcinoma has a greater tendency to recur than the neuroblastomas.[5] Some studies have reported there is no correlation between the histological patterns of esthesioneuroblastomas.[6, 7] With the newer classification patients with neruoendocrine carcinoma have survival rates of 100% at 5 years, 88% at 7 years, and 77% at 10 years.[5]

Neuroendocrine carcinomas of the nasal cavities are uncommon tumors which are difficult to differentiate from other tumors. Due to the previously ill-defined diagnostic criteria for these tumors it is unknown what proportion of nasal tumors they make up. Homzie and Elkon reviewed the literature between 1924 and 1980 and found that a total of 173 cases had been described.[4]

Several authors have commented on the difficulty of distinguishing these tumors from malignant lymphoma, atypical carcinoid, malignant paraganglioma, poorly differentiated olfactory neuroblastoma and undifferentiated carcinoma.[8, 9] Electron microscopy and special staining techniques are usually needed to make the pathological diagnosis.

Once the diagnosis of neuroendocrine carcinoma has been made most studies advocate surgical excision and radiation to the primary area.[6, 10-12] These tumors have been characterized as radiosensitive and, to a limited extent, radiocurable. A total dose of 5,000 rads has been recommended with the fields arranged and tailored to the extent of the disese.[11]

In general, chemotherapy has not been recommended as the primary treatment modality; however, Wade et al presented 3 cases which were treated primarily with various chemotherapeutic agents with complete or partial remissions occurring in all 3 cases. An additional 9 cases were also cited in which chemotherapy was the secondary mode of treatment. Four of the 9 cases had either a partial or a complete response. This review suggested the tumors were sensitive to cyclophosphamide, vincristine, nitrogen mustard, thiotepa and probably doxirubicin and DTIC.[13] There has been a case report of remission of an unresectable esthesioneuroblastoma with high-dose cyclophosphamide, doxirubicin, and vinblastine followed by autologous bone marrow transplantation.[12]

It has been advocated by some that unresectable patients with metastases be treated with cyclophosphamide and vincristine before irradiation and resection. In one review, 2 of 4 patients treated in this manner had complete responses lasting more than two and one half years.[11] These results suggest more evaluation is needed to determine the efficacy of chemotherapy in patients with advanced disease. The low incidence of these tumors precludes use of randomized prospective trials and the methods for appropriate treatment must be largely deduced from case studies.

This report emphasizes the need for complete evaluation of patients presenting with persistent nasal obstruction. Otolaryngologic evaluation is recommended for all nasal patients unimproved after convention therapy whether infectious, inflammatory, allergic or malignant disease is suspected.

References

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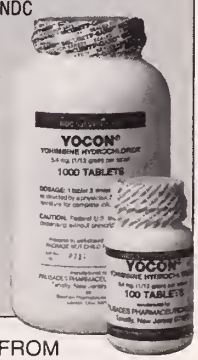
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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New Laryngeal Surgery May Improve Voice

STEVEN GRAY, M.D.
Iowa City, Iowa

Laryngeal framework surgery has increased the options the otolaryngologists have available to treat voice disorders ranging from unilateral vocal cord paralysis to pitch disorders.

A NEW SURGICAL CONCEPT may improve treatment of various voice disorders. Laryngeal framework surgery is a group of operations designed to change the cartilaginous framework to which the vocal cords are attached. By changing this framework, vocal cord position, length and tension may be altered. Laryngeal framework surgery involves an external approach to the thyroid and arytenoid cartilages. It is performed through a small incision in the neck over the thyroid cartilage.

Usually this surgery is performed under local anesthesia so the patient may be able to speak while the adjustments are being made on the vocal cords thus being better able to determine the final outcome.

Correcting Paralysis

The most common type of laryngeal framework surgery is called vocal fold medialization. It is performed for unilateral vocal cord paralysis. Symptoms of unilateral vocal cord paralysis are hoarseness, breathy voice and occasionally aspiration. The surgery consists of making a small window in the lateral thyroid ala over the paralyzed vocal cord. This window of cartilage is depressed and pushed medially thereby pushing the paralyzed vocal cord into an adducted position. The patient is asked to vocalize and adjustments are made until good closure is achieved.

Another method of treating vocal cord paralysis is teflon injection of the paralyzed cord. This remains a common and acceptable way to treat this disorder.

The second type of laryngeal framework surgery is arytenoid adduction. This is performed for patients who have unilateral vocal cord paralysis associated with a very wide gap between the vocal cords. These people generally have aspiration and are nearly aphonic due to their vocal cord paralysis.

To allow good closure and obtain a good voice result these patients are best treated by an arytenoid adduction technique. A suture is placed through the muscular process of the arytenoid cartilage and sutured to the anterior edge of the thyroid cartilage. This pulls the arytenoid in a fully adducted position and allows for much better glottic closure. Sometimes these patients may require both arytenoid adduction and vocal fold medialization for best correction of their paralyzed vocal cord.

Changing Voice Pitch

Another problem which can be handled with laryngeal framework surgery is that of pitch change. Occasionally a man or woman

Dr. Gray is associated with the University of Iowa Hospitals Otolaryngology Department in Iowa City.

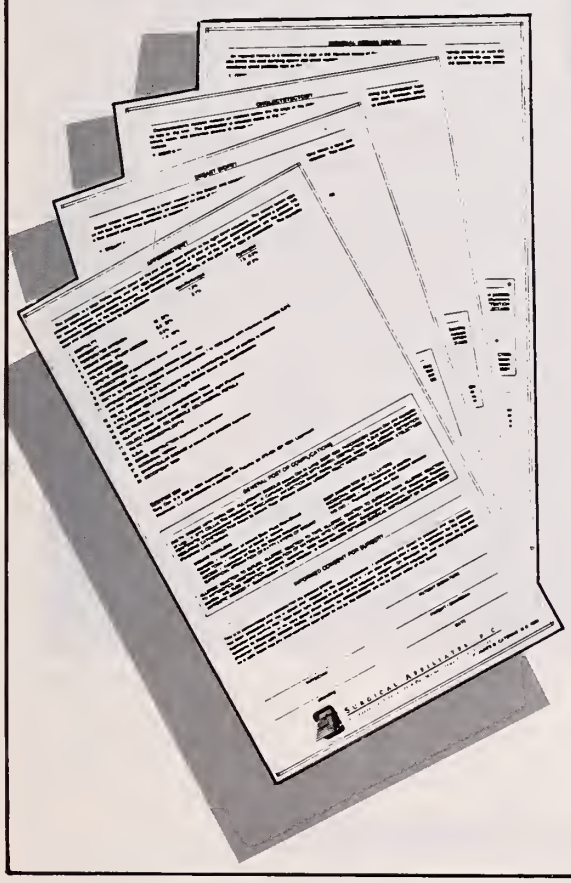
may wish to have a deeper voice. This can be partially accomplished by performing a vocal cord relaxing procedure. This typically will decrease the speaking pitch by about 30 hertz. This surgery is performed through a small incision in the neck. The area of the thyroid cartilage to which the vocal cords attach is released and placed posteriorly approximately 3 mm. This reduces the tension on the vocal cord and the pitch lowers. This surgery is done under local anesthesia so the patient is awake and able to phonate and vocalize during the surgery to allow better pitch control.

Laryngeal framework surgery is gaining popularity among otolaryngologists because it allows the surgeon to have a more predictable result since the patient may speak during the actual operation. Another advantage is the surgery is performed on the framework of the larynx but not on the vocal cords themselves. This leads to less scarring of the vocal cord and consequently a better voice result.

This surgery increases the options the otolaryngologist has available to treat voice disorders ranging from unilateral vocal cord paralysis to pitch disorders. Other surgical methods for voice disorders including teflon injection, gel foam injection, laser and micro laryngeal surgery still remain important methods to treat voice disorders.

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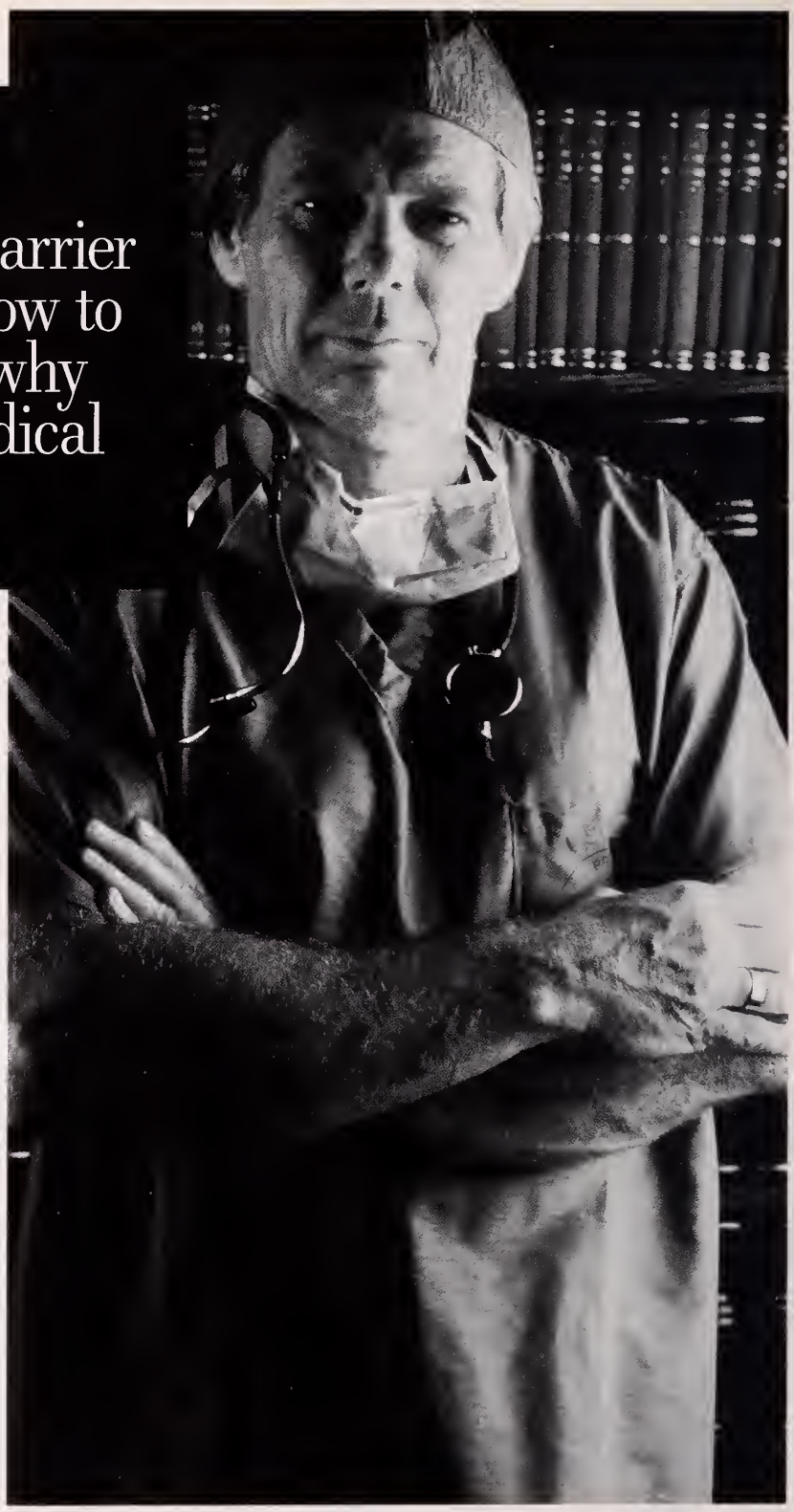
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Urolithiasis: Extracorporeal Shock Wave Lithotripsy and Endourologic Techniques

HOWARD N. WINFIELD, M.D.
Iowa City, Iowa

The author discusses effective treatment of stubborn kidney stones, utilizing extracorporeal shock wave lithotripsy augmented with traditional endourologic techniques.

THE LAST DECADE has seen remarkable development in management of urolithiasis. Prior to the mid 1970s, open surgery was the traditional approach to calculi too large to pass spontaneously through the upper collecting system. The postoperative course sometimes included persistent urinary drainage or wound infection but was generally uneventful, with a 4- to 6-week healing period.

In the late 1970s, endourology came into vogue. This term encompasses closed, controlled manipulations of the urinary tract (such as transurethral procedures of cystoscopic and ureteroscopic stone manipulation or extraction) but primarily refers to *percutaneous nephrolithotony* (Gr. *nephros* kidney, Gr. *lithos* stone, Gr. *teinein* to stretch). This procedure, also known as *percutaneous nephrolithotripsy*, is utilized for removal of renal and/or ureteral calculi through a posterior percutaneous artificial tract directly through the renal parenchyma into the collecting system.

The first description of this procedure in the modern literature was in the 1940s by Rupel and Brown, followed in 1955 by W. Goodwin and colleagues using the technique of percutaneous nephrostomy placement.[1,2] However, the procedure never caught on until radiological instrumentation improved and close collaboration developed between departments of urology and interventional radiology.

In percutaneous nephrolithotripsy, an 18G nephrostomy needle is used to puncture an appropriate posterior calyx, allowing entrance of an 0.035-inch guidewire into the collecting system and down the ureter. The tract is dilated up to 28-34F using rigid or balloon dilators. This procedure can be done under assisted intravenous sedation but is usually performed under general or epidural anesthesia. Once the tract is created and held open with a sheath, the surgeon looks directly into the collecting system with a rigid or flexible nephroscope and extracts the stone(s) using graspers or baskets. If the stone is too large to remove in one piece, ultrasonic or electrohydraulic energy fragments the stone.

Following the procedure, a nephrostomy tube (20-22F Malecot or Council catheter) is left

(Continued next page)

Dr. Winfield is associated with the Department of Urology, University of Iowa Hospitals and Clinics.

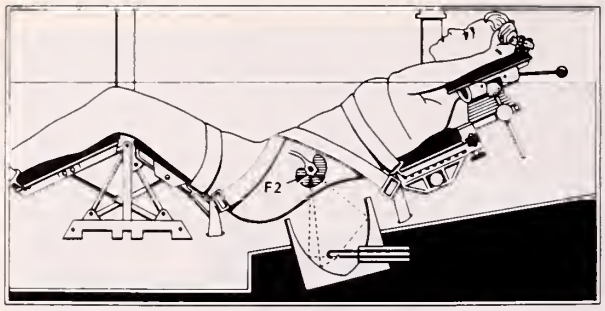


Figure 1. Positioning of patient in HM3 Dornier Lithotripter so the targeted stone comes into focus at F2, the point of maximum pressure.

in the renal pelvis for temporary drainage to ensure there are no perforations of the collecting system or residual stone fragments. The nephrostomy tube is removed and leakage ceases usually within 24 hours. Possible intraoperative complications include hemorrhage (3%), perforation of renal pelvis or ureter, perirenal fluid collection, pneumothorax, hemothorax, loss of nephrostomy tract, abdominal viscera injury, displacement of calculi, equipment failure, anesthetic risk and avulsion of ureteropelvic junction.[3, 4]

However, compared with open surgery, morbidity is low and hospital time is reduced by 3-4 days. The patient returns to full activity 1-2 weeks after surgery, compared to 3-6 weeks after open surgery.[5] The residual stone rate is comparable.

Innovative Technique

In the early 1980s, an exciting and innovative technique broke into clinical practice in West Germany — *extracorporeal shock wave lithotripsy* (ESWL).[6] The first Dornier kidney lithotripters in the United States in 1984 demonstrated over 70% of all upper collecting system calculi could be treated effectively without the morbidity of percutaneous or open surgery.

ESWL, as used in most centers in the U.S., involves the HM3 model. The patient is administered an epidural or general anesthetic and positioned in the "water bath" so the stone(s) come into focus on 2 fluoroscopic screens; this is the "F2 point" (Figure 1). The machine creates an electrical discharge that passes down an electrode. The electrical spark heats the water, causing explosive vaporization and expansion and forming the "hydraulic shock wave." The wave is focused electronically by the surrounding ellipsoid, which sends the wave off towards the calculus.

As the body tissues contain enough water, the hydraulic shock waves are able to pass through with no measurable damage or loss of energy. On striking the calculus, the energy is released and pulverization begins. Depending on the size, density and location of the stone, up to 2,400 shocks may be required. Assuming good pulverization of the stone, the material will pass out of the urinary tract with minimal pain or other problems. For "ideal stones" (stones calcified to allow optimal visualization, less than 3 cm in diameter or located in renal pelvis or a well-drained calyx) ESWL is far superior to percutaneous or open surgery.

Over the next few years, ESWL was tested on "less ideal" calculi. These stones were larger, sometimes partial or complete staghorns, located in the ureter (mid or proximal), radiolucent stones (urate or cystine), sometimes behind narrowed infundibuli or in calyceal diverticula. Complications occurred after ESWL monotherapy for these less ideal stones and the continued need for endourological procedures became apparent.

'However, compared with open surgery, morbidity is low and hospital time is reduced by 3-4 days. The patient returns to full activity 1-2 weeks after surgery.'

Endourological procedures ancillary to ESWL remain necessary in treating the following kinds of stones:

- Radiolucent stones (i.e., uric acid, cystine, some infection stones) require transurethral cystoscopic placement of ureteral catheters for injection of iodinated contrast material to aid in visualization of the calculi on the ESWL fluoroscopic monitors.
- Cystine stones, which are relatively radiolucent and do not break up well with ESWL due to their intrinsic hardness. If they are over 1 cm, they are best managed by percutaneous extraction and/or chemical dissolution.
- Calculi in the distal third of the ureter, unless they can be manipulated into the upper

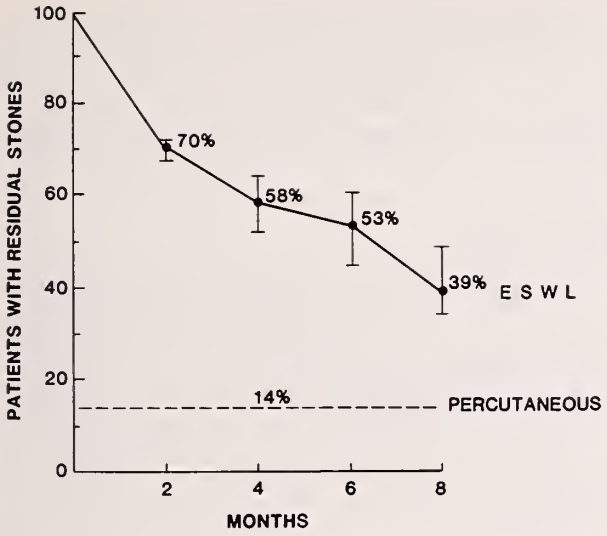
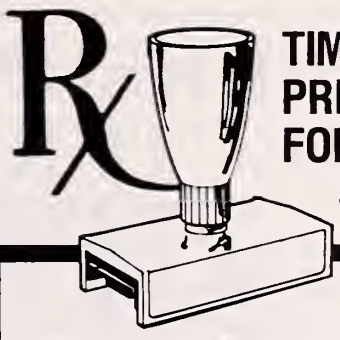


Figure 2. Stone remnant rate of patients with staghorn calculi treated with either percutaneous nephrolithotripsy or ESWL monotherapy. At 8 months following treatment, 39% of patients treated with ESWL alone still have stone fragments in kidney compared with 14% of patients treated with percutaneous nephrolithotripsy. (Reproduced by permission: Winfield, HN, et al: Monotherapy of staghorn renal calculi: a comparative study between percutaneous nephrolithotomy and extracorporal shock wave lithotripsy, *J Urol* 139:895-99.)

ureter or renal pelvis by endourological techniques, cannot be focused on the HM3 machine. They are best managed by ureteroscopic basket extraction.

- Stones in the mid or proximal ureter are difficult to visualize without a ureteral stent. If they cannot be manipulated to the renal pelvis or bypassed by a ureteral stent, they do not break up well. Thus, the approach to ureteral calculi today is "push back and then smash!" Stones in the ureter that do not pulverize after ESWL require percutaneous antegrade or ureteroscopic retrograde extraction.
- With the use of ESWL monotherapy for stones over 3 cm, the rate of ureteral obstruction by *Steinstrasse* (Ger. "street of stone") rises significantly. The stone burden, though well pulverized, is too great for the ureter to handle. Fever, significant renal colic, sepsis and loss of renal function may result without ancillary procedures such as percutaneous nephrostomy tube placement or ureteroscopy. Further studies have demonstrated initial cystoscopic placement of a double-J ureteral catheter prior to ESWL for larger stones allows the stone burden to pass down into the bladder more safely.[7] However, this may be a temporizing measure for stones approaching the size of partial or complete staghorn calculi.
- It has become apparent the optimal way to treat most staghorn calculi is initial debulking with percutaneous nephrolithotripsy, followed a few days later by ESWL. The reduced stone burden now has 2 exit routes. With this combined approach to large stones, the associated morbidity of each procedure is reduced and hospital stay is decreased.
- A major concern with ESWL monotherapy for larger stones has been the residual stone remnant rate. The incidence of stone growth and/or recurrence is augmented in the case of infection-related stones. Residual infected stone material acts as the nidus for further infection and the correct milieu for stone growth. What occurs with residual stone not associated with infection is presently unknown. However, the various theories of stone crystallization and formation suggest supersaturated urine with lack of urinary inhibitors in the presence of a "triggering nidus" of stone may be the right ingredients for further stone formation.

(Continued next page)



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In a recent study comparing ESWL monotherapy to percutaneous nephrolithotomy monotherapy for staghorn calculi, the residual stone remnant rate at 8 months follow-up was 39% for ESWL and 14% for percutaneous surgery (Figure 2). It is now suggested combined treatment for larger stones will lead to earlier stone-free status.[8]

- In cases where stones are behind narrowed infundibuli, ureteropelvic junctions or in calcyceal diverticuli, ESWL may pulverize the stone but stone fragments will probably not pass through the collecting system. These cases would be best managed by percutaneous surgery for removing the stone and dilating the strictured areas.[9, 10]
- Finally, endourological procedures are being applied to the correction of ureteropelvic junction obstruction, ureteral strictures, ureterointestinal anastomotic strictures and even urethral strictures. We recently initiated a study to examine the possibilty transurethral balloon dilatation of the prostatic urethra may be the appropriate treatment for selected patients with symptomatic benign prostatic hyperplasia.

In conclusion, endourology plays an important role in management of urolithiasis in association with ESWL. To effectively treat all stones, "stone centers" require clinicians experienced in ESWL and endourologic techniques.

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Marion E. Alberts, M.D.



The Editor Comments

Leadership

Reason and calm judgment, the qualities especially belonging to a leader.
— Tacitus, Latin Historian, c. AD 55-c117

AUTUMN HAS APPROACHED and in the coming months we are enjoying the splendor of nature's changing colors. The warm sunshine of the day and the cool nights add to the pleasures of autumn. We can think of cold winds and snow later. For now it is multi-colored leaves, the last blooms of the flowers, and the thrill of our favorite football team's victories.

There is another aspect of this time of year that demands our attention. Autumn seems to be a starting point in responsibilities of life. The summer leisures are over, the children and youth have returned to school and the activities of various organizations are renewed. The medical profession likewise embarks on a new year of non-clinical activities. Our societies renew their monthly meetings, the hospital staff meetings are resumed and the announcements of the winter's menu of CME courses are more prevalent in our mail.

These activities that require time and effort carry a responsibility that varies in each individual. Recently I read a comment about leadership that had a meaning which can apply to all of us. The writer was explaining how leadership is closely linked to being a prophet as well as a seeker. The prophet brings vision and penetrating insight. The seeker brings openness, aggressive searching and good critical judgment. The leader adds the art of persuasion backed by persistence, determination and the courage to venture and risk. The outstanding leader can be both a prophet and a seeker as well. Some find it difficult if not impossible to be either, but each one of us can develop skills that add to the activities of our non-clinical responsibilities in our chosen profession.

It is to the leaders that I address these comments. Our leaders must be more than figure heads . . . but unfortunately some are elected to a post because no one else wanted the position. To those who have accepted such a position, carry the gavel with pride, a sense of responsibility and a desire to manage the task. Sometimes leadership is frightening because it demands efforts that may be outside our usual manner of life. The leader has to take risks. The leader has to look beyond . . . to visualize the future and avoid being buried in the present. And the leader has to motivate others to act with equal high values.

Leadership can earn respect; but not always popularity. Yet, the leader who demonstrates actions based on factual ideals may show eventually that the respect can be coupled with increasing popularity. It is a difficult task to be in the leadership role. The good leader fosters interest by the followers so that they are more active and often become leaders in their own right. Then the leader helps others find success. Leadership is an art that can be developed in others, much as a good teacher stimulates students to become teachers. Were it not for such a succession of "passing the baton" (gavel) our society would falter. This has been demonstrated too often at higher levels of society wherein poor leadership fosters failure. Each of us has a responsibility to society, so each in our individual way must strive to be a leader. — *M.E.A.*

Richard M. Caplan, M.D.



CME Notebook

Touching

TRY THIS EASY TEST QUESTION: Each item of the following list has been largely replaced in modern diagnostic and therapeutic efforts by *what?*

- Feeling a patient's brow to judge the presence of fever
- Listening for lung or heart sounds by direct or indirect auscultation
- Judging a woman's pelvic outlet to determine its adequacy for normal childbirth
- Performing a neurological exam to assess the likelihood of intervertebral disc protrusion

The answers: measuring body temperature with a clinical thermometer; taking a roentgenogram of the chest and/or an echocardiogram; ordering X-ray pelvimetry; obtaining a CT-scan or MRI of the region in question.

Next: How are the above answers alike? First, in contrast to the items in the initial question, they are almost never performed by the physician who seeks the information. Ordinarily, they aren't performed by physicians at all, although some physician is likely to intepret an image of some sort. Second, the procedures listed in the question involve a physician actually touching the patient; in the substituted situation, however, the skin-to-skin contact is omitted. Does it matter? I think it matters enormously. And not just because I, as a dermatologist, think skin has some peculiar therapeutic power. Rather, the psychological symbolism of a human touch conveys caring.

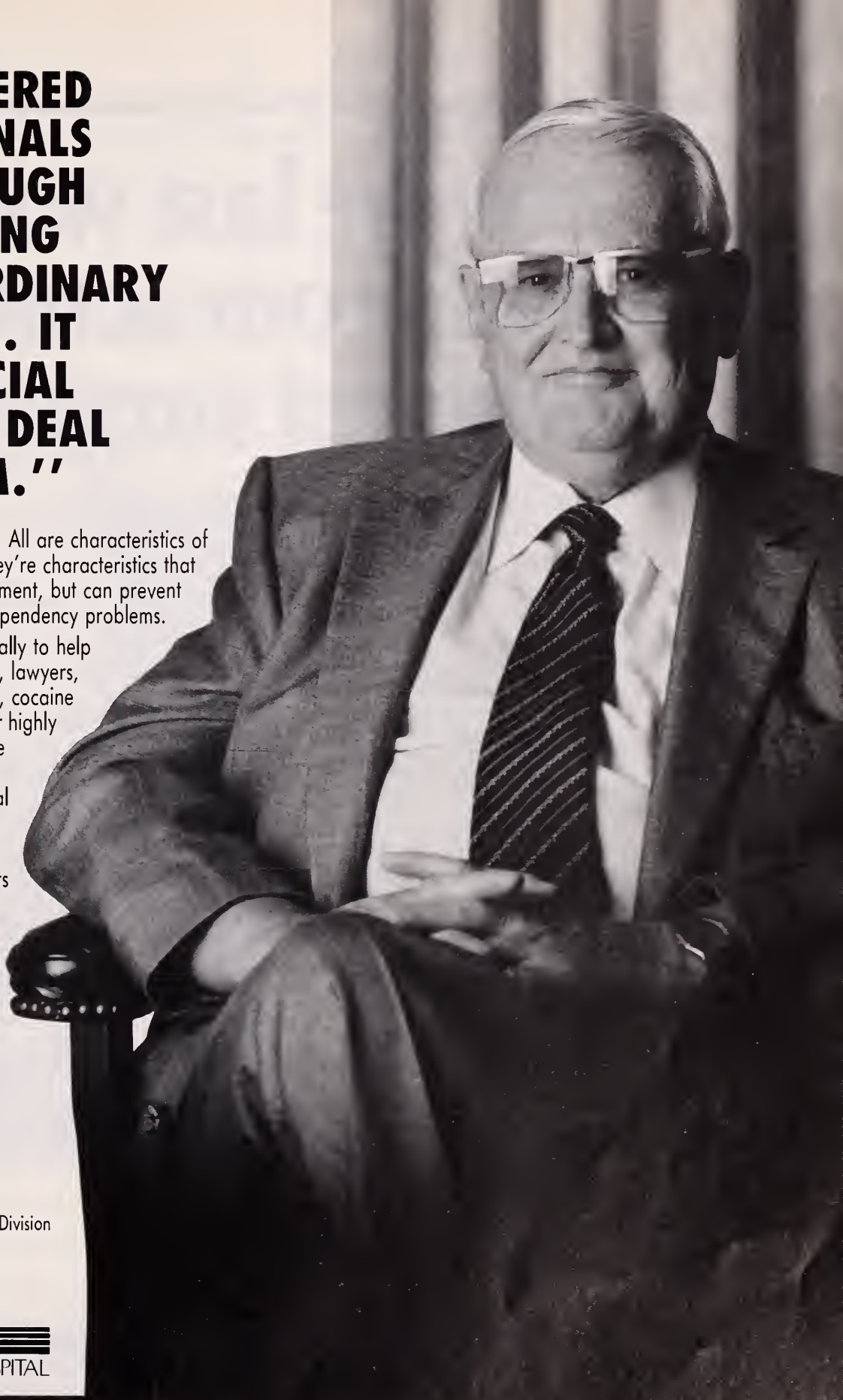
An acquaintance recently complained that 3 consecutive orthopedic surgeons she consulted for a protracted episode of disabling lumbar muscle spasms never touched her back. They observed her disordered movements, heard her story, commented on the impressive loss of lordotic curve, ordered and looked at her X-ray pictures, suggested rest, exercise and medication routines — but never once touched her back. Maybe there were no further useful data to be gathered through touching, but this patient obviously thought touch would have provided them useful information.

More important, probably, is the notion that touch has healing properties of high order. From biblical stories of healing (old and new Testaments) through modern "faith healers," or the touch of the king to "cure" scrofula, our culture associates direct contact with healing. To soothe or relieve pain with a touch or caress may be learned behavior rather than instinctual, but it is learned early and profoundly.

Some medical careers don't need or allow for touching the patient, a fact that may attract some physicians. But any others who deal directly with patients need to understand the value of the touch. Call it placebo, if you wish, but make the most of it. You can hardly find a safer, less expensive, more effective placebo. I'm not talking about therapeutic massage, or the touching that reduces a fracture. I know of no CME courses in the touching of which I speak, but would gladly try to arrange individualized training for those who recognize their inadequacy and can't solve it alone. It is not quackery or mysticism. In educational jargon, it is a psychomotor skill, as are skiing or playing the flute, and can be learned in behalf of the physician's highest calling.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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Roland E. Herrington, M.D.
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Experienced, expert anesthesiologists at the Mercy Nerve Block Center can help patients alleviate pain using neural blockade and other pain management methods. Treatment methods may include a variety of specialized procedures, medications, injections and transcutaneous nerve stimulation (TNS).

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Record Retention

Maintaining business records can be a costly and difficult process. No one ever seems to know who should keep what, where or for how long. The following checklist, compiled by the American Institute of Certified Public Accountants, should help answer most basic record retention questions. Because state statutes on tax and payroll records vary widely, you should check with your state tax commissioner for specific details.

Record	*Retain*
Accident report/claims (settled cases)	7 yrs
Accounts payable ledgers and schedules	7 yrs
Accounts receivable ledgers and schedules	7 yrs
Audit reports	perm
Bank reconciliations	2 yrs
Bank statements	3 yrs
Capital stock and bond records: ledgers, transfer registers, stubs showing issues, record of interest coupons, options, etc.	perm
Cash books	perm
Charts of accounts	perm
Checks (canceled — see exception below)	7 yrs
Checks (canceled for important payments, i.e. taxes, purchases of property, special contracts, etc. Checks should be filed with the papers pertaining to the underlying transactions)	perm
Contracts, mortgages, notes and leases (expired)	7 yrs
(unexpired)	perm
Correspondence (general)	2 yrs
Correspondence (legal and important matters only)	perm
Correspondence (routine) with customers and/or vendors	2 yrs
Deeds, mortgages and bills of sale	perm
Depreciation schedules	perm
Duplicate deposit slips	2 yrs
Employment applications	3 yrs
Expense analyses/expense distribution schedules	7 yrs
Financial statements (year-end, other optional)	perm
Garnishments	7 yrs
General/private ledgers, year-end trial balance	perm
Insurance policies (expired)	3 yrs
Insurance records, current accident reports, claims, policies, etc.	perm
Internal audit reports (longer retention periods may be desirable)	3 yrs
Internal reports (miscellaneous)	3 yrs
Inventories of products, materials and supplies	7 yrs
Invoices (to customers, from vendors)	7 yrs
Journals	perm
Magnetic tape and tab cards	1 year
Minute books of directors, stockholders bylaws and charter	perm
Notes receivable ledgers and schedules	7 yrs
Options records (expired)	7 yrs
Patents and related papers	perm
Payroll records and summaries	7 yrs
Personnel files (terminated)	7 yrs
Petty cash vouchers	3 yrs
Physical inventory tags	3 yrs
Plant cost ledgers	7 yrs
Property appraisals by outside appraisers	perm
Property records, including costs, depreciation reserves, year-end trial balances, depreciation schedules, blueprints and plans	perm
Purchase orders (except purchasing department copy)	1 year
Purchase orders (purchasing department copy)	7 yrs
Receiving sheets	1 year
Retirement and pension records	perm
Requisitions	1 year
Sales commission reports	3 yrs
Sales records	7 yrs
Scrap and salvage records (inventories, sales, etc.)	7 yrs
Stenographers notebooks	1 year
Stock and bond certificates (canceled)	7 yrs
Stockroom withdrawal forms	1 year
Subsidiary ledgers	7 yrs
Tax returns and worksheets, revenue agents reports and other documents related to determination of income tax liability	perm
Time books/cards	7 yrs
Trademark registrations and copyrights	perm
Training manuals	perm
Union agreements	perm
Voucher register and schedules	7 yrs
Vouchers for payments to vendors, employees, etc. (includes allowances and reimbursement of employees, officers, etc., for travel and entertainment expenses)	7 yrs
Withholding tax statements	7 yrs

yrs = years perm = permanently

Collecting Vital Statistics

THE STATE LEGISLATURE ESTABLISHED in 1880 what is now the Iowa Department of Public Health (IDPH) to "provide for the collection of vital statistics. . . ." Over a century later, the department has expanded responsibilities including administering programs for disease prevention, substance abuse, health care access and cost containment. However, collecting vital statistics continues to be an important task.

Statistics Custodians

Now accumulating 100,000 certificates per year, IDPH is the custodian for over 10 million certificates of births, marriages, dissolutions and deaths dating back to the late nineteenth century. The department issues over 75,000 certified copies of these certificates annually. These records are more valuable than the fragile volumes of parchment or the rolls of microfilm belie. They are "vital records" because the documents establish heritage, rights, privileges and a basis for epidemiological research.

'Physicians are encouraged to review their policies and procedures to assure timely, accurate and complete filing of birth and death certificates.'

Delays and omissions in the production of these basic documents translate into hardship to Iowans and postpone the availability of tools necessary to act on emerging health threats. On a personal level, families are unable to qualify for basic assistance programs, surviving family members are unable to receive life insurance benefits or estate settlements and, for retirees, pension benefits are delayed. On a more global level, delays in birth or death registration preclude possible life-saving interventions when newly recognized patterns of disease or trauma could be identified.

Guidelines for Physicians

To comply with the law, help Iowans who need copies of vital records and enable timely epidemiological research, physicians need to:

- Sign birth certificates within 3 days of the event.
- Sign death certificates within 24 hours of the event.
- Type all entries (including physician name and address) except signature.
- Complete all sections and check for accuracy.
- Sign certificates in *black* ink.

Physicians are encouraged to review their policies and procedures to assure timely, accurate and complete filing of birth and death certificates. Training physicians and hospital staff on filing these vital records is available through IDPH.

For more information, contact Cheryl Grasty, Bureau of Vital Records, at 515/281-4946.

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.



...but in every legislative session, they vote on nearly 250 bills that determine the kind of care you can provide to your patients!

Medicine's views on these important issues are critical to ensuring that good legislation becomes law — and that bad legislation doesn't. IMPAC helps make sure that our views are heard!

IMPAC supports legislative candidates whose voting records and personal philosophies indicate a willingness to listen to and appreciate medicine's views. By supporting IMPAC, you'll be helping to see that the non-physicians in the Legislature continue to receive the best medical advice on legislation which affects our patients and our profession!

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Contributions are not limited to the suggested amount. Neither the AMA nor the IMS will favor or disadvantage anyone based upon the amounts of or failure to make pac contributions. Contributions are subject to the limitations of FEC Regulations. (Federal Regulations require this notice.) Paid for by the Iowa Medical Political Action Committee, 1001 Grand Avenue, West Des Moines, IA 50265. Contributions to AMPAC and IMPAC are not deductible as charitable contributions for Federal Income Tax purposes. If your practice is incorporated, IMPAC and AMPAC voluntary political contributions should be written on a personal check.

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over $50,000	9.5%

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- No medical underwriting — issue to 99
- 7 year disappearing surrender charge
- Guaranteed principal and interest

U. of I. College of Medicine

OF 113 IOWA HIGH SCHOOL JUNIORS AND SENIORS QUESTIONED IN A SURVEY OF SEX PRACTICES, about half reported having sexual intercourse during the past year and only one in 5 said a condom was used every time. This finding comes from a College of Medicine study among 322 junior and senior high students as part of an assessment of the effectiveness of physician-directed AIDS education. Half of the 113 sexually active juniors and seniors reported never using contraception and many had more than one partner.

WORKSAFE IOWA HAS JOINED WITH 5 HOSPITALS *in Iowa to help spread information designed to reduce occupational injuries and illness through education and consultation. They are Allen Memorial, Waterloo; Iowa Methodist, Des Moines; Mercy, Dubuque; St. Joseph-Mercy, Mason City; and St. Luke's, Cedar Rapids. The program is in the College's Institute of Agricultural Medicine and Occupational Health.*

PEOPLE WITH OBSESSIVE-COMPULSIVE DISORDERS do not incorporate the learned behaviors of other such patients into their own rituals as earlier believed. **Donald Black, Psychiatry,** and colleagues, made the discovery while directing a support group for people with this disorder. They originally feared patients would compound their problems by learning others' obsessive-compulsive behaviors. Instead Black found these patients are grateful to have the extra support. "It seems to be important for them to know that others have the same problems," he notes.

UI GRADUATES IN THE PHYSICIAN'S ASSISTANT PROGRAM OUTSCORED ALL OTHERS *in the 1988 national certifying examination taken by 1,360 graduates of 64 programs in the nation. The average score of the 19 graduates was 99 points above the average for the other programs. Nine scored in the top 10%, 2 in the first percent and all above the mean.*

A NEW NON-INVASIVE TEST TO ANALYZE VIBRATION WHITE FINGER (VWF) disease in workers who operate vibratory tools such as chain saws, rock drills and air hammers (chipping tools) has been developed by UI orthopaedic researchers. Triggered by coldness, VWF reduces circulation to the fingers and often damages nerves, muscles and joints. Fingers become white, stiff and painful and have reduced tactile sensation. "We observed for the first time that the blood flow rate of the long finger temporarily but dramatically increased immediately after using an air hammer in subjects with severe VWF which made their fingers feel better immediately after using the tool," said Thomas Brown, Orthopaedic Surgery. This test may lead to improved tool design and therapeutic approaches.

CONTROL OF PAIN *is the focus of work to be conducted under a new grant awarded to* ***Gerald Gebhart, Pharmacology,*** *by Bristol-Myers Company. The 5-year, $250,000 grant, will help him continue his research on mechanisms of visceral pain. Gebhart and his colleagues are pioneers in mapping the body's pain-modulation system — which is now thought to play a role in silent ischemia. They have found impulses sent to the brain from the nerves in the heart can activate systems that suppress pain. Also, repeated episodes of cardiac ischemia can further dampen the pain sensitivity of certain neurons in the spinal cord.*

THE EFFECTS OF DIET ON HYPERTENSION in people over age 50 is the focus of a study by **Ross Feldman, Internal Medicine and Pharmacology.** Feldman will study how blood vessels dilate in response to hormones related to the participant's diet. He'll examine the effects of both low and high sodium diets.

This material is furnished by The University of Iowa Health News Service.

Health Care Coverage That Wasn't Born Yesterday

The changes in health care and health coverage in the last five decades have been tremendous. And, through it all, Iowa's Blue Cross and Blue Shield Plans have set the pace. All the while, we have worked diligently to help our customers get the most out of their health care dollars, to provide excellence in service and to give our members cost-efficient, quality benefits. Like Total Health Network of Iowa and Family Health Plan, our innovative health maintenance organizations...ALLIANCE Select, our preferred provider program...and Delta Dental Plan of Iowa.

We've worked with the providers of health care for 50 years to assure Iowans of affordable, high-quality coverage. And you can be sure that we'll be doing the same for another 50 years. It's a tradition we're proud of...and one you can count on.



Blue Cross Blue Shield

Des Moines / Sioux City

Medical News/Products and Programs

NERVE STIMULATOR/LOCATOR INTRODUCED — Singer Medical Products, Inc., a manufacturer of health care equipment, announces the introduction of the Axostim nerve stimulator/locator. The newest member of Singer Medical's product line, Axostim is the only disposable nerve stimulator on the market to provide both visual and audio response indicators and use an atraumatic grounding electrode versus a needle for more stable grounding. In addition, the Axostim is built with an insulated tip for precise stimulation as well as providing a constant current pulse to prevent induced neuropraxia. Axostim features include high/low current and fast/slow pulse settings; disposable, single use; long battery life; visual and audio response indicators; constant current pulses; insulated tip and an atraumatic grounding electrode. For more information on the Axostim or Singer Medical Products, Inc,. write Singer Medical Products, Attn: Marketing Department, 790 Maple Lane, Bensenville, Illinois 60106 or call 800/422-4885.

NEW DISPOSABLE SPECIMEN BAG LINE — The Med-Pac Division of Uniflex Inc., one of the world's foremost plastics manufacturers, has introduced Speci-Gard™, a new line of disposable specimen transfer bags. Designed exclusively for the medical profession, Speci-Gard™ bags feature one-step, permanent adhesive sealing to create a liquid tight seal. The new liquid tight style SPA-R press-to-close bag is ideal for virtually any hospital/reference lab/clinical use. It features an open exterior pocket with a special flap to securely hold requisitions. Competitively priced, each Speci-Gard™ bag accepts direct ball point pen writing, is tamper evident and seals permanently for ultimate safety. All bags are available in clear or opaque plastic and custom imprinting. For free samples, pricing and more information, write or call Uniflex, Inc., Med-Pac Division-JW, 383 West John Street, Hicksville, New York 11802, toll free 1-800/223-0564.

NEW VERSION OF CARDIAC EVALUATION SYSTEM — Vivix Corporation, Milpitas, California, has begun distribution of the newest version of its cardiac evaluation system. Plurimus has been designed to appeal to primary care physicians, smaller clinics and hospitals with less than 100 beds. The complete system includes a holter recorder, treadmill, monitor, computer and all the necessary accessories. For more information contact Vivix Corporation, 824 North Hillview Drive, Milpitas, California, 408/263-4501.

ROSS LABORATORIES INTRODUCES NEW 250-ML SIZE PEDIAZOLE® — Ross Laboratories, Division of Abbott Laboratories announces the introduction of Pediazole® (erythromycin ethylsuccinate and sulfisoxazole acetyl for oral suspension) in new 250-mL size bottles. The new size conveniently provides the entire recommended dosage for children weighing 17 kilograms or more. Pediazole® is effective against both beta-lactamase-producing and non-producing strains of Hemophilus influenzae. When reconstituted with water as directed on the label, the Pediazole® granules form a white, strawberry-banana flavored suspension which provides 200 mg erythromycin activity and the equivalent of 600 mg of sulfisoxazole per teaspoon (5 mL). Pediazole®. Suspension is also available in 100-mL, 150-mL and 200-mL bottles.

AUDIO CASSETTE PROGRAM — Doctor/Patient Intercom is a subscription audio cassette program that provides monthly health care information geared to improve and maintain health. For over 37 years, Audio-Digest Foundation, as part of the California Medical Association, has provided updated clinical medical cassettes to doctors and other health care professionals. Today, with the production of 26 "Spoken Medical Journals" each and every month, Audio-Digest plays a vital role in the on-going education of over 250,000 health care professionals throughout the world. A one-year subscription is available for $49.80.

(Continued next page)

The July issue alone costs $4.15. Order by calling 800/423-2308 (in California, 800/232-2165) or mail check to Doctor/Patient Intercom, 1577 East Chevy Chase Drive, Glendale, California 91206.

UPJOHN LAUNCHES NEW ACNE TREATMENT — Cleocin T Topical Lotion has been cleared for marketing by the U.S. Food and Drug Administration for the treatment of acne. The product is especially formulated for acne patients with dry, sensitive skin. Cleocin T Topical Lotion is a water-based product rather than an alcohol or oil-based product. The water base formulation provides a soothing effect and adds moisture to the skin. The lotion contains clindamycin phosphate and comes in a 60-mL plastic squeeze bottle. It is now stocked on pharmacy shelves in the U.S.

DISPOSABLE WASHCLOTHS — Scott Paper Company has announced the introduction of PROMISE disposable pre-moistened washcloths for adult incontinence care in health care facilities and in the home. PROMISE washcloths are designed to replace the messy basin-water-soap method by putting a ready-to-use, cost-effective washcloth at the care giver's fingertips. The cloth is packaged in a wide-mouth tub allowing for easy opening and one-hand dispensing. The large 11″×13″ cloth, impregnated with lanolin and a mild cleansing agent, is alcohol-free and is soft enough to be used on face and hands. Scott Health Care Products markets a variety of product lines to health care facilities and the home care market. Information about these products can be obtained from the Scott Health Care Products sales office by calling toll-free 1-800/992-9939.

REPORTS FROM THE AMERICAN COUNCIL ON SCIENCE AND HEALTH — The American Council on Science and Health recently released 3 new reports that are of interest to physicians as well as consumers. *Pesticides and Food Safety* concludes that the minute levels of pesticide residue detected in some U.S. produce pose no hazard to the health of adults or children. Discussed are regulations for pesticide control, determining residue limits, as well as how the consumer can deal with the safety of foods consumed.

Cancer Clusters reviews the significance of unusually high numbers of a specific type of cancer occurring in a small geographic area over a limited period of time. Is the disease caused by a virus or some other infectious agent transmitted from one person to another or does a particular environment have significance?

Food Allergies, the third report, reviews adverse reactions to foods — true allergies to foods caused by an abnormal immunological response to a food or misinterpreted "allergies."

These reports may be obtained from the American Council on Science and Health, 1995 Broadway, 16th Floor, New York, New York 10023-5860 for $3.00 and a self addressed stamped ($.75 postage) #10 business size envelope for each.

VOICE-CONTROLLED COMPUTER WORKSTATION FOR THE DISABLED — A new voice-controlled computer system and robotic workstation from Heath/Zenith Educational Systems allows people with severe physical upper-body limitations to operate a personal computer. At the heart of the system, built around a Zenith Data Systems PC and Flat Technology Monitor, is proprietary voice recognition software and hardware developed by PRAB Command Inc. of Kalamazoo, Michigan. The voice control system converts spoken commands into traditional keystrokes for programming and operating all of the system's components. The language-independent, user-dependent voice system can be simply and quickly "trained" to recognize commands from any number of individual users, regardless of slang, dialect, language or speech impediment. The package allows any MS-DOS program to be operated entirely by voice. Simple voice commands allow the user to operate the PC, a telephone management system and a specially designed robotic arm. The "PRAB Voice Command" robot arm, which can retrieve documents from the printer, pick up heavy books and perform other manipulative tasks, offers 6 axes of motion, 27-inch maximum reach, 8-pound maximum payload and a variety of gripper options.

Heath/Zenith, the exclusive distributor of the system in North America, offers 2 versions: 1) Voice Command I, priced at $49,990, includes the PC, monitor, printer, robot, voice-recognition and telephone management system and a modular workstation with adjustable desk levels and specially designed furniture shelves to hold books, manuals and personal items that can be retrieved by the robot under voice control; 2) Voice Command II includes the PC and monitor, as well as the voice-recognition and telephone management system, but does not

include the robot arm, printer or the modular workstation and shelves. Voice Command II is priced at $21,990. Heath/Zenith also offers both systems under a leasing program that can be tailored to users' individual needs.

For further information contact Zenith Electronics Corporation, 1000 Milwaukee Avenue, Glenview, Illinois 60025, 312/391-8181.

MONOGRAPH ON SINGLE DONOR PLATELET THERAPY INTRODUCED — "Single Donor Platelets in Transfusion Therapy," a monograph on platelet transfusion therapy, is now available from the Component Therapy Information Bureau, an educational service of Baxter Healthcare Corporation, Fenwal Division. Author of the monograph is Lilian M. Reich, M.D., Associate Blood Bank Director, Memorial Sloan-Kettering Cancer Center, New York and Associate Professor of Clinical Medicine, Cornell Medical School.

"Single Donor Platelets in Transfusion Therapy" includes information on indications for platelet therapy and a comparison of multiple and single donor platelets. Alloimmunizations, transfusion-associated diseases and graft-versus host disease are discussed, as are standards for measuring the efficacy of platelet transfusions and data on the cost, availability, harvesting and storage of single donor platelets. The monograph includes a summary of recommendations made at the Consensus Development Conference on Platelet Transfusion Therapy, convened by the National Heart, Lung and Blood Institute of the National Institutes of Health (NIH), the Center for Drugs and Biologics of the Food and Drug Administration and the Office of Medical Applications of Research (NIH).

A free copy of "Single Donor Platelets in Transfusion Therapy" can be obtained by writing the Component Therapy Information Bureau at P.O. Box 620, Deerfield, Illinois 60015 or call 312/940-6400.

BRAIN SURGERY WITHOUT AN INCISION *— Patients with abnormal clusters of arteries and*

(Continued next page)

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veins in the brain (arteriovenous malformations or AVMs) and deep-seated brain tumors now have an alternative to conventional, open-skull surgery. The Gamma Knife is a non-invasive surgical instrument which uses gamma radiation from Cobalt-60 sources to selectively destroy abnormal brain tissue. This is accomplished by precisely focusing 201 intersecting beams of gamma radiation onto the abnormal tissue. Treatment consists of a single dose of gamma radiation lasting up to 20 minutes. The results of this treatment occur over time as the abnormality shrinks, stops growing or eventually disappears. In approximately 85% of patients treated, tumor growth is stopped and AVMs are totally obliterated within 2 years. Only a few centers in the U.S. will offer Gamma Knife treatment. Patients recently began receiving treatment at the first facility in the Southeast to acquire the Gamma Knife.

NEW INSTRUMENT TO DETECT BRAIN DISORDERS—Researchers from the Helsinki University of Technology in Finland and IBM have announced development of the most advanced instrument ever built to detect changes in the brain's magnetic field. The experimental tool promises greatly improved diagnosis of disorders linked to brain malfunction, including epilepsy, stroke and deafness. The powerful research tool also may be used to chart complex pathways of normal brain function. The new instrument, a type of "magnetometer," is about 4 times more effective at recording the brain's weak magnetic signals than other experimental models previously designed. Operating with 24 detection channels, the new machine can measure magnetic fields in the brain that are some 1 billion times weaker than the intensity of the earth's magnetic fields.

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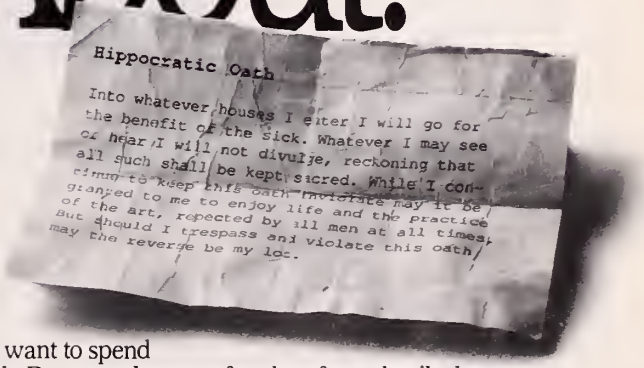
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About Iowa Physicians

Dr. Buchi Ukabiala has joined Surgical Affiliates in Des Moines. Dr. Ukabiala received the M.D. degree from the University of Nigeria Faculty of Medicine, Enugu, Nigeria and completed a pediatric residency at the Royal Victoria Hospital and Alder Hey Children's Hospital, London, England. **Dr. Patrick Beck** has joined the Pediatric and Adolescent Clinic in Mason City. Dr. Beck received the M.D. degree from the U. of I. College of Medicine and completed his residency at the Medical College of Virginia, Richmond, Virginia. **Dr. Dennis Mallory,** Toledo, was appointed as chief FAA aviation medical examiner and aircraft crash investigator for the July 19 United 232 crash in Sioux City. **Dr. Brian Heineman** has joined the Wiltfang-Paulson-Wille Clinic in Grinnell. Dr. Heineman practiced in Story City prior to joining the clinic. He is also replacing **Dr. Lisa Drabinowicz** who recently left practice at the Brooklyn Medical Clinic. **Dr. John K. MacGregor,** Mason City, has retired after serving the community for 38 years. Dr. MacGregor received the M.D. degree at Columbia University College of Physicians and Surgeons, New York, New York and joined Surgical Associates of North Iowa in 1952. **Dr. Kevin Jones** and **Dr. Fred Onley** have begun practice at the newly opened Midlands Family Medicine in Council Bluffs. Dr. Jones received the M.D. degree from the U. of I. College of Medicine and completed his family practice residency at Baylor College of Medicine, Houston, Texas. Dr. Onley received the M.D. degree at the University of Nebraska College of Medicine, Omaha and also served his internship there. **Dr. Thomas R. McMillan** has retired after 21 years of practicing medicine in Leon. Dr. McMillan received the M.D. degree at the University of Nebraska College of Medicine, Omaha, Nebraska and served his internship at Memorial Medical Center, Corpus Christi, Texas. **Dr. Douglas Prochaska** has closed his practice in Lake Park after one year of service to the community. **Dr. Terry Sutton,** has accepted the position of medical director of Travelers Network Group, an HMO based in Austin, Texas. Dr. Sutton practiced in Fairfield for nearly 20 years. **Dr. James Bloom** has left his practice at the Nashua Medical Clinic to join the Air Force. Dr. Bloom had been at the Clinic since 1987. **Dr. Patrick Beck** has joined the Pediatric and Adolescent Clinic of Mason City. Dr. Beck received the M.D. degree from the U. of I. College of Medicine and completed an internship and residency at the Medical College of Virginia, Richmond, Virginia. **Dr. Wes Parker** has begun medical practice in Cherokee. Dr. Parker received the M.D. degree from the U. of I. College of Medicine and completed his residency at St. Francis Mayo Family Practice in LaCrosse, Wisconsin. **Cardiology Associates,** Des Moines, has changed its name to **Iowa Heart Center.**

What's Your Line?

Do you or a colleague have a hobby or interest you'd like to share with other *IOWA MEDICINE* readers? Whatever the talent (an accomplished artist or musician, a craftsman, an international traveller . . .), we'd like to hear about it! Call Christine Clark at IMS headquarters, 223-1401 or 1-800-747-3070 or complete the form below and send to *IOWA MEDICINE*, 1001 Grand Avenue, West Des Moines, Iowa 50265.

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Working For Safer Roads

ORGANIZED MEDICINE'S CONCERN with the medical aspects of driver licensing has a long history, as demonstrated by this quote from an editorial appearing in a 1906 edition of the Journal of the American Medical Association:

> The numerous accidents from motor cars call for special legal requirements as to those who handle them. If an automobilist is out of health, nervously weak, defective in sight and hearing or under the influence of drugs or stimulants, he is not a safe man to run an automobile.

Unhappily, over 80 years later the problem of "numerous accidents from motor cars" is still with us. In 1987, 491 Iowans died in motor vehicle accidents, an 11% increase from the previous year. Also during 1987, 74 Iowans were injured per day in traffic accidents. Close to half of the accidents were alcohol related. DOT officials report that in 1988 only 55% of Iowans complied with Iowa's seat belt law.

Obviously, there is much to be done in the area of motor vehicle safety and driver licensing. The Iowa Medical Society's Subcommittee on Safe Transportation is one group looking for ways to save lives on our streets and highways.

The subcommittee's chief function is to act as a liaison between the IMS and the Iowa Department of Transportation. The subcommittee interacts on a regular basis with the DOT in matters of driver licensing, traffic safety legislation and other matters. On a rotating and anonymous basis, members of the subcommittee serve on the DOT's Medical Advisory Board.

The Medical Advisory Board reviews cases in which there is some question regarding the medical advisability of granting driving privileges to certain individuals. On an anonymous basis, the physicians make recommendations in cases where expert medical advice is needed to determine whether someone should be licensed to drive. The board also works with outside medical experts for assistance in reviewing cases involving drivers with convulsive disorders.

The Subcommittee on Safe Transportation also has a function in the legislative arena. The subcommittee sometimes studies legislative proposals the DOT plans to make during the next session of the Iowa General Assembly, and the subcommittee has the opportunity to suggest its own legislative initiatives. In addition, IMS physicians sometimes go through the subcommittee with legislative proposals related to transportation safety.

The subcommittee is a long-standing component of the Iowa Medical Society's agenda, and its members consider on a regular basis many other issues related to safe transportation. During the past several years, these have included drivers impaired due to alcohol or drug use, accidents involving adolescent drivers and licensing of drivers whose health is impaired due to age.

The subcommittee is currently studying various proposals whereby physicians would voluntarily report patients who pose a threat to driver safety on the highway. Also, the IMS 1990 legislative agenda contains proposals for legislation mandating helmet use, creation of stricter laws for moped operators and lowering of the blood alcohol content level for legal impairment.

Through these activities and others, Iowa's physicians are very much involved in the battle to make our highways safer.

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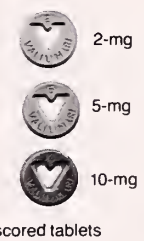
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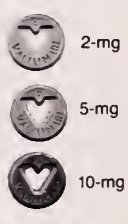
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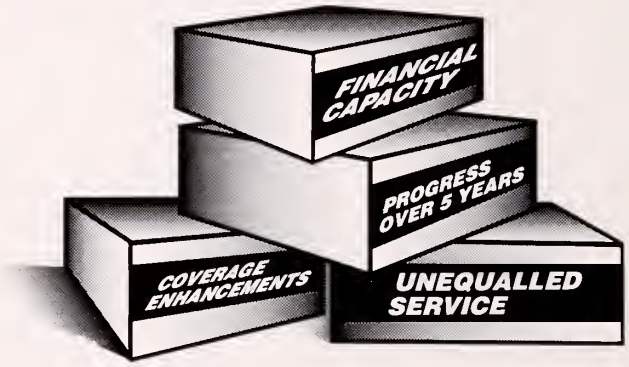
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December 1989

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The slide of the beautiful "Physicians' Window" which appears on this month's cover was provided by the Washington National Cathedral. For more details on the stained glass window, see The Editor Comments, page 593.

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Hyperbaric Oxygen Therapy



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Construction of New IMS Headquarters Begins

CONSTRUCTION OF THE NEW IMS headquarters began in earnest several weeks ago, with officials of the IMS and the city of West Des Moines in attendance at a groundbreaking ceremony October 19.

The new building, which measures 22,671 square feet, is being built on property directly east of the present IMS headquarters. It will sit approximately the same distance from the street as the present building.

Targeted completion of the new building is late summer or early fall of 1990. The 3-story building will house approximately 37 staff members. Iowa Physicians Mutual Insurance Trust and IMS Services will occupy the ground floor. The second floor will contain Iowa Medical Society staff members and meeting rooms for all 3 organizations. The basement floor will contain printing and storage facilities and the employee cafeteria. There will be over 80 parking spaces at the rear of the building.

The building will be owned by the Iowa Medical Society and financed through: 1) a portion of IMS reserves; 2) lease revenue from IPMIT and IMS Services; and 3) Income from leasing the current IMS headquarters building. This method of financing precludes the need to raise IMS dues. The official groundbreaking was held following the regular meeting of the IMS Board of Trustees October 19.



RED LETTER DAY . . . IMS officials pose at the groundbreaking ceremony for the new IMS headquarters building. Pictured are (from left): IMS Executive Vice President Eldon Huston and IMS Board of Trustees members Carol Aschenbrener, M.D., Iowa City; William Eversmann, Jr., M.D., Cedar Rapids; Robert Whinery, M.D., Iowa City; Donald Rodawig, M.D., Spirit Lake; Bruce Trimble, M.D., Mason City and James White, M.D., Dubuque.

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PRESENTS

"CHILD/DEPENDENT ADULT ABUSE: IDENTIFICATION AND REPORTING"

FEBRUARY 14, 1990

THIS 3-HOUR SEMINAR WILL IDENTIFY, DEFINE AND PROVIDE SPECIFIC INFORMATION CONCERNING INVESTIGATION AND REPORTING OF SUSPECTED CHILD/DEPENDENT ADULT ABUSE AS MANDATED BY THE STATE OF IOWA, IOWA CODE 1987.

SUSPECTED ABUSE: INVESTIGATIVE AND REPORTING TECHNIQUES FOR THE HEALTH CARE PROVIDER

PEDIATRIC ABUSE INDICATORS FOR THE MANDATORY REPORTER

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ATTENDANCE AT THIS EDUCATIONAL PROGRAM WILL FULFILL THE STATE REQUISITE OF THREE (3) HOURS COMBINED TRAINING EVERY FIVE (5) YEARS IN THE IDENTIFICATION AND REPORTING OF SUSPECTED CHILD/DEPENDENT ADULT ABUSE.

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THIS SEMINAR WILL BE HELD IN THE MERCY EDUCATION CENTER AT FIFTH STREET AND UNIVERSITY AVENUE IN DES MOINES, IOWA. BROCHURES ANNOUNCING GUEST FACULTY, PROGRAM AGENDA AND REGISTRATION INFORMATION WILL BE MAILED 8 WEEKS IN ADVANCE OF THE SEMINAR TO ALL MEMBERS OF THE IOWA MEDICAL SOCIETY. THOSE PHYSICIANS OR OTHER HEALTH CARE PROFESSIONALS REQUIRING ADDITIONAL INFORMATION MAY CONTACT THE DEPARTMENT OF MEDICAL EDUCATION, MERCY HOSPITAL MEDICAL CENTER, AT THE ADDRESS OR TELEPHONE NUMBER GIVEN BELOW.

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President's Privilege





MERRY CHRISTMAS TO THE membership of the Iowa Medical Society.

Medicine is in tenuous and uncertain times. We are in the midst of reimbursement and rural access problems. I am hopeful these problems will be resolved. I can assure you that your IMS staff and officers are aware of these problems. They are monitoring these key issues and working toward favorable change.

We are excited about our new IMS headquarters building project. We are looking forward to moving in late summer or early fall of 1990. Consolidating our 3 corporations under one roof will be more efficient in coordinating the operations and expenses of the Society.

During my years of work with the IMS, I have gained appreciation for our fine staff. They are dedicated and efficient; they are genuinely attuned to physicians' needs and interests.

It is more complicated to care for patients now, but it is exciting to be able to use new technologies and advancements to improve patient care. Despite all the problems we will no doubt face in the coming year and beyond, I remain proud to be a primary care doctor in rural Iowa.

I wish you and your families a very happy holiday season and a blessed New Year.

Donald F Rodawig MD

Donald F. Rodawig, M.D.
President

Public Health Leads IMS Legislative Agenda

RANDY WINSTON, M.D.
Des Moines, Iowa

Transportation safety, tobacco restriction and other vital issues such as mandatory Medicare assignment are IMS priorities for the upcoming session of the Iowa Legislature. The author, chairman of the IMS Committee on Legislation, discusses the 1990 IMS legislative agenda.

MEDICINE IS FACING A number of challenges from the public, from our patients, from the regulatory system and from legislators. As chair of the IMS Committee on Legislation, I have an opportunity to view those challenges from an expanded perspective. The political climate as it relates to health care has evolved and changed since most of us began practicing medicine.

Society is increasingly interested in health care, including such varied but interrelated issues as quality of care, cost of care and providing care to those who have no access to the health care system. This societal focus is translated into health related legislation by our elected officials on both the state and national levels.

Dr. Winston, a Des Moines neurosurgeon, is serving his first year as chairman of the IMS Committee on Legislation.

The 1990 state legislative session is expected to be shorter than usual. Legislators have set a deadline of April 1, 1990 for conclusion of the upcoming session. Normally, the session would last until mid to late April. To accomplish this shorter session, legislators plan to convene several committees in December to begin the legislative process. This will give them a head start in January with the goal of making the most efficient use of the legislature's time.

Because 1990 is an election year and several legislators are running for higher office, legislative activities will be affected by the specter of certain campaign issues.

The legislative climate in which the IMS will operate under will be somewhat different from the last several years. As a result of the decreases in liability insurance rates by major insurance carriers, there is less momentum for additional liability reforms.

Rate decreases can be attributed to liability reforms passed in the 1970s and 1980s which have reduced the number of lawsuits filed. The liability insurance cycle also seems to be at a point in which rate decreases can be expected. During the next few years another round of increases could begin. While liability remains a concern of the IMS, it is important to maintain existing reforms.

Public Health Package

The IMS has an opportunity to focus on some other important health care issues. The IMS Committee on Legislation has developed a package of public health legislation resulting from grassroots efforts by physi-

cians to bring these issues to the attention of the IMS House of Delegates. Our 1990 public health legislation package includes:

- Increase minimum age for moped operators to age 16.
- Require demonstrated skill test for moped operators.
- Require use of protective head gear for motorcycle and moped operators.
- Decrease per se blood alcohol level for driving under the influence to .05%.
- Make public buildings smoke free.
- Increase tax on tobacco products.
- Decrease young peoples' access to tobacco products.
- Require written danger warnings for tanning booth customers and acknowledge that customer has received and understands warning.
- Update existing laws and prohibit possession of illegal fireworks.

Other Issues

The IMS will be active on many other issues. Access to health care for uninsured Iowans is a priority issue for Iowa physicians. The IMS is participating in task forces studying this problem and is working with both the legislative and executive branches in developing solutions.

The IMS is also concerned about access to health care for senior citizens. The IMS believes the Medicare Partners program, developed in conjunction with the Iowa Association of Area Agencies on Aging, is an excellent mechanism to ensure affordable health care for Iowa's low income elderly. This voluntary approach is receiving significant support from physicians and senior citizens. As of September 1, 1989, 76% of Iowa physicians were enrolled in Medicare Partners or accepted assignment for all Medicare patients.

Each year, the Iowa General Assembly faces numerous proposals for mandated insurance benefits and changes in scope of practice and licensure for various practitioners. The IMS supports establishment of a health profession review commission to collect and analyze information on these issues. The establishment of a well-structured review commission would provide a mechanism to assist legislators in making difficult decisions on these issues.

Cooperative Efforts

The IMS is initiating several programs to help physicians and legislators work more closely together. The IMS legislative "Hotline" will provide legislative information updated at least weekly. Physicians and auxiliary members will be able to call a toll-free number to receive a message about current legislative issues. The "Hotline" also provides a mechanism to get timely information to legislative contact persons regarding issues coming up for a vote in committee or on the floor of the House or Senate.

This fall the IMS and IMS Auxiliary developed a "Mini-Internship" program to provide an opportunity for legislators to spend a day with a local physician. Both legislators and physicians benefit. Legislators have an opportunity to see a physician's practice up close and physicians can gain additional insight into the legislator's concerns. This program has begun on a pilot basis in several areas of the state and appears to be quite successful.

The IMS is also initiating 2 physician visibility programs to bring physicians to the Statehouse to talk to their legislators. The first program is the Doctor of the Day Program. Physicians will be scheduled to come to the Capitol to meet with their legislators, attend committee meetings, listen to debate and assist on legislative issues.

The second program is the Physician Expert Program which is designed to identify physicians who will serve as experts on specific issues. These physicians agree to be available to either come to the Capitol to provide testimony and assistance or serve as resource persons for the IMS.

With the changing political climate, it is more important than ever for physicians to become involved in the political process. Government and public officials are increasingly concerned about our health care system. This translates into legislation and regulation affecting how we practice medicine and care for our patients. We must participate in the dialogue with our lawmakers. If we don't, the discussion will take place without us. Our participation gives policymakers the benefit of the best available information and ensures that we have an opportunity to help shape public policy on our future health care system.

Peer Review: Indictment, Trial and Beyond

JOHN D. HUDSON, J.D.
MARK D. RAVREBY, M.D., J.D.
Des Moines, Iowa

The authors discuss the disciplinary process created by the Peer Review Improvement Act and problems it causes for the practitioner.

THERE IS NO DOUBT the Peer Review Improvement Act of 1982 (PRIA) has dramatically changed the practice of geriatric medicine. With this sweeping legislation the federal government is now firmly committed to peer review as a method of encouraging quality health care at a reasonable cost.

To implement the program, broad disciplinary powers have been delegated to Peer Review Organizations (PROs) throughout the country. In Iowa, the Iowa Foundation for Medical Care (IFMC) is the designated PRO. This article outlines the disciplinary process created by PRIA and briefly discusses its problems for the practitioner.

Increased Sanctions Urged

As might be expected with a program of this magnitude, PRIA has resulted in another vast bureaucracy. The Health Care Financing Administration (HCFA) has the overall responsibility of implementing PRIA and the Medicare program. As it relates to physician discipline, the most important office within HCFA is that of the Inspector General, currently Richard Kusserow. Mr. Kusserow's background includes service with the Marines, the FBI and the Central Intelligence Agency.

As early as 1986, Mr. Kusserow urged PROs to be more aggressive in disciplinary matters. Referring to the lack of sanctioning activity in certain states he commented, "[n]ow either they have great medicine in those states or the PROs are not being aggressive enough. Maybe the answer is to get rid of the PROs that aren't doing their job."[1] The IFMC on April 15, 1986 was advised by Mr. Kusserow (in the context of contract renewal) that increased sanctioning activity was requested and "your record in this area will, of course, be part of the PRO evaluation process presently being conducted by HCFA."[2]

If IFMC determines a sanction is appropriate, it must make a recommendation for discipline to Mr. Kusserow and his staff. A sanction recommendation can be either a suspension from Medicare or a monetary penalty. Either recommendation can trigger a publication in the local newspaper that the physician has been disciplined by Medicare. The results to a practice can be catastrophic and arguably can jeopardize the physician's license to practice medicine.

Recommendations from IFMC are reviewed initially by the Denver office of the

Mr. Hudson practices with the Des Moines firm of Carney, Hudson, Williams, Blackburn and Grask. Dr. Raverby practices internal medicine and law in Des Moines. He teaches at Drake University and is legal counsel for the medical staff at Mercy Hospital, Des Moines.

Inspector General and ultimately by James F. Patton, director of the Office of Administrative Sanctions Office of Investigations. Mr. Patton has no medical education but is assigned the task of reviewing complex medical judgments. Communications with Mr. Patton must be in writing and there is no opportunity for an oral hearing. Mr. Patton's employment contract with HCFA calls for merit pay bonuses directly linked to the number of PRO sanctions imposed.[3] Critics of the system have labeled this a bounty system reminiscent of Judge Roy Bean and other justices of the peace who keep a percentage of fines they impose.

Plan of Action

With apparent pressure from the Inspector General to increase sanctioning activity and with a bureaucrat who is rewarded for the number of sanctions imposed, how can physicians balance the playing field?

Upon receipt of an "Initial Notice" of a violation, consider IFMC your adversary. The same committee issuing you the Initial Notice will serve as your judges in subsequent proceedings. The roles of prosecutor, judge and jury are combined in the Comprehensive Review Committee (CRC or the Committee).

Request a meeting with the IFMC. You will be given an opportunity to meet with the committee. In actuality, this will not be a meeting but a trial. You will be made to defend not only the specific case or cases being reviewed but your general practice. Probing questions will be posed by as many as 20 physicians including specialists from various fields. Few procedural safeguards exist but failure to request the meeting may be construed as a failure to cooperate with the IFMC.

Consult an attorney. The meeting before CRC is perhaps the most important disciplinary event in a physician's career. Attorneys can assist in an effective and pointed presentation of your case. The proceedings will be transcribed by a court reporter and sent to the Inspector General for his review and decision. Attorneys are trained to "make the record." You should consult competent counsel immediately upon the receipt of the Initial Notice.

Understand your competency as a physician is at issue. Before a physician may be suspended from the Medicare program, there must be a finding by the Inspector General that the physician is unwilling or unable to comply with professional obligations. This vague standard is generally thought to mean the physician is incompetent. The chairman of the committee has testified that the physician must prove his competence to CRC. To meet such an evidentiary burden, we suggest colleagues be asked to provide testimony concerning the quality of medicine practiced by the physician. Of course, expert testimony from other physicians defending the questioned cases is invaluable. We have represented physicians at the CRC, the administrative law level, and the Federal Court. Legal issues may change, but medical competency is the bottom line.

'The results to a practice can be catastrophic and arguably can jeopardize the physician's license to practice medicine.'

Prepare carefully for your meeting. IFMC review is usually limited to hospital records which may be incomplete. Ask to see the records reviewed by CRC. If office records are available for a questioned patient, provide them to the committee. Remember you will be questioned about a variety of topics arising from the challenged case(s). It is prudent to carefully review authoritative textbooks prior to any appearance before the Committee.

Consider a corrective action program. You should realistically and critically review the quality of care you provided in the challenged case or cases. Have the case(s) reviewed by colleagues. If deficiencies are noted by the CRC you may be offered a program of corrective action. This might include continuing education, increased consultations or even termination of a particular area of patient treatment. Sanctions are supposed to be the last resort and can be implemented only after all else has failed. A carefully considered corrective action program may preclude the imposition of sanctions.

(Continued next page)

Conclusion

Sanction activity by IFMC is increasing. The imposition of a sanction can be devastating to a professional career. David Thomas, M.D., has promised a "more friendly attitude by the IFMC."[4] Nonetheless, physicians must understand the inherent bias of the sanctioning process and how best to combat a more aggressive IFMC. In our experience, much can be done to encourage an equitable resolution of the problem.

Finally, physicians are entitled to appeal any adverse decision to an administrative law judge and eventually to the federal courts. A notice of sanction need not be reason for despair if the physician builds his case promptly upon receipt of the dreaded certified letter from the IFMC.

References

1. Interview with Richard Kusserow, *Hospital*, May 20, 1986, page 78.
2. Letter from Richard Kusserow to Fred Feree, April 15, 1986.
3. Sworn testimony of James Patton, *In the Matter of Kenneth Melashenko*, Docket No. 000-54-7088, pages 2963-75.
4. *Iowa Family Physician*, Summer, 1989, page 13.

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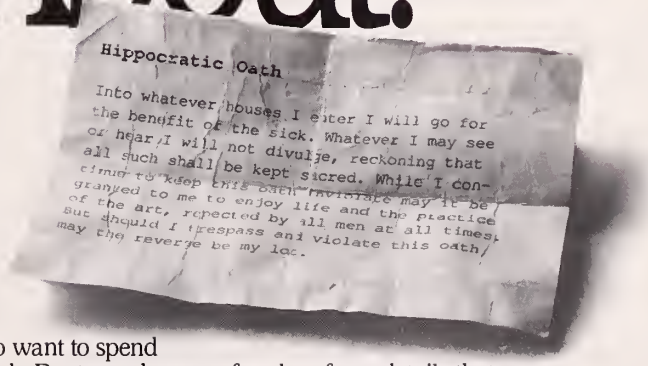
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Special 'Questions and Answers'

Our Campaign Finance System: A Status Report

For this month's special legislative issue, IOWA MEDICINE asked Elizabeth Buck, executive director of the Iowa Democratic Party, and Randy Enwright, executive director of the Republican State Central Committee, to comment on political campaign financing. Political Action Committee (PAC) contributions and their impact on candidates are discussed.

How important is a PAC contribution to an individual candidate?

RANDY ENWRIGHT: The importance of PAC contributions to an individual candidate varies from one candidate to another. Some candidates view PAC contributions as an essential element of their fundraising strategy. However, other candidates choose not to accept PAC contributions. The Republican Party does not make that decision for individual candidates.

ELIZABETH BUCK: Contributions from PACs are very important to candidates seeking office in the 1990s because of the rising cost of running campaigns. Because PAC donations are usually larger than most contributions from individuals, they play a key role in the total fundraising budget.

Most campaigns view a PAC check as a number of individuals pooling their money toward a common goal. It is always important to remember that a PAC donation does not come from one individual but from a large number of contributors with a common interest or concern.

What happens to PAC money? Exactly how is it used?

RANDY ENWRIGHT: PAC contributions are generally used to pay for mailings, brochures and advertisements. Often, the number of letters a candidate is able to mail to voters depends on the amount of money the candidate is able to raise. In this respect, PAC contributions can be very important.

ELIZABETH BUCK: Contributions from PACs are deposited in a candidate's campaign account and reported to the Iowa Campaign Finance Disclosure Commission. PAC contributions are merged with all other donations and are used to meet the total campaign budget. The largest expenditures in most campaigns are media, direct mail, materials and staff.

Does the existence of a PAC negate the need for individual contributions?

RANDY ENWRIGHT: Absolutely not. The expression of commitment by individuals through contributions is essential to the process. The Republican Party receives only a small percentage of its contributions from PACs. Most of the party's support comes from small, individual contributions. Because we rely on these contributions, we are more responsive to individual concerns.

ELIZABETH BUCK: PACs are very important to campaigns, but an individual will frequently disagree with the endorsement made by their PAC or will wish to become personally involved in a local campaign. Individuals can become involved with the candidates of their choice by contributing or volunteering.

How do candidates view PACs which contribute to their opponents?

RANDY ENWRIGHT: Most people who run for office realize PACs support candidates who support the PACs views. If both candidates support the views of a particular PAC, that PAC will often choose to contribute to neither candidate.

ELIZABETH BUCK: Understandably, the candidate will perceive that the PAC does not share the candidate's views on issues most important to the PAC. Because of their public positions on the issues, candidates often know from which PACs they might reasonably seek a contribution.

The campaign finance system has been under scrutiny lately. Why?

RANDY ENWRIGHT: Iowans become disenchanted with the political system when they hear a legislator used contributions to purchase a car. They also get upset when they hear a key legislator is holding a fundraiser during the legislative session, at a time when he is deciding the future of bills being pushed by the same lobbyists from whom he is soliciting contributions. When incidents such as these occur, the voters have a right to demand meaningful reform.

ELIZABETH BUCK: The cost of running a competitive and effective campaign has risen dramatically in recent years. In all likelihood, this trend will continue. As the need to raise money increases, many campaigns seek PAC contributions, making it seem that the role of individuals is decreasing. Also, PAC contributions have been perceived by some as influence-peddling.

What alternatives are there to the present system?

RANDY ENWRIGHT: The Republican Party and Governor Branstad have asked for campaign finance reform. We support a ban on fundraisers for legislators during the legislative session. We also support prohibiting officeholders from using campaign contributions for personal use.

Governor Branstad has asked that all candidates for governor be required to disclose, on a daily basis, contributions they have received. This would let voters know if any outside groups are trying to influence the election at the last minute.

'Contributions from PACs are very important to candidates seeking office in the 1990s because of the rising cost of running campaigns.'

Republican Party Chairman Richard Schwarm has also asked for creation of a bipartisan ethics committee comprised of an equal number of Republicans and Democrats. Mr. Schwarm feels this bipartisan committee is a must if we are going to make our elected officials accountable to voters.

ELIZABETH BUCK: Public financing, such as the system used in the presidential general election, would be one alternative to the present system. Less dramatic changes might include partial public financing as operates during the presidential nominating process, overall campaign spending limits, or tighter restrictions on the use of campaign funds.

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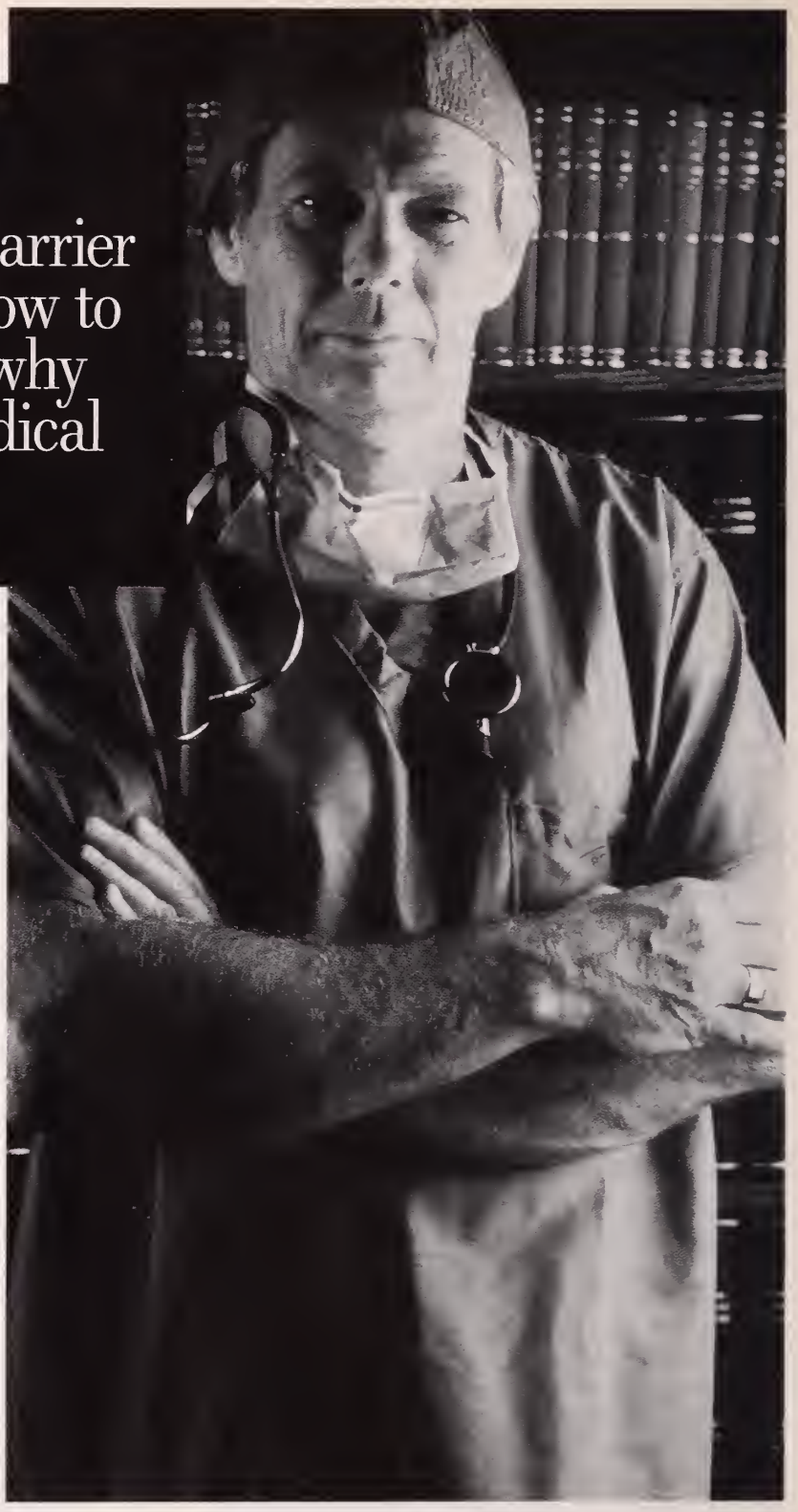
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Necrotizing Fasciitis

WILLIAM R. REYNOLDS, D.D.S., M.D.
HANS ZINNECKER, M.D.
K.A. DAVAIAH, M.D.
CARL PETERSON, M.D.
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Des Moines, Iowa

Early recognition of necrotizing fasciitis is the key to successful treatment. However, initial presentation of this disease is variable. In this case report, the first clinical evidence was a gram stain of the deep surface of the superficial fascia.

NECROTIZING SOFT TISSUE INFECTIONS are rare and require early diagnosis and treatment. These infections include a myriad of confusing syndromes which have been based upon various combinations of bacterial etiology, anatomic location, portal of entry, strata of skin involvement, the clinical appearance on presentation and the clinical course. Syndromes include necrotizing fasciitis, streptococcal myonecrosis, meleneys ulcers, meleneys synergistic gangrene, acute nonclostridial crepitant, nonclostridial gas gangrene, synergistic necrotizing cellulitis, necrotizing cellulitis, bacterial synergistic gangrene, necrotizing erysipelas, hemolytic streptococcal gangrene and Fournier's gangrene. Furthermore, there apears to be no microscopic difference between these syndromes. There is thrombosis of cutaneous microcirculation. This observation leads one to consider the possibility these infections are the same disease process at different stages or these syndromes share common clinical presentations.[1, 2]

The key to treatment is early diagnosis. Various methods have been described. Reports have used manometric measurements of intrafascial pressure, frozen sections or placement of sterile instruments below the superficial fascia to determine its attachment to underlying tissues.[3-7] In this case report, a gram stain taken below the superficial fascia early in the clinical course was the earliest clue that a serious surgical infection was present.

Case Report

A 55-year-old Type II non-insulin dependent diabetic fell from a hay loft onto a manger 3 days prior to presentation. He suffered abrasions of his right and left elbows and right and left knees. He was in shock upon arrival at a referring Veterans Administration nursing home with an infected right leg. Blood pressure was 90/60, pulse 150, ABG's ph 7.2, pCO_2 23, and pO_2 90. With the presumed diagnosis of septic shock, the patient was stabilized on fluids, placed on Cefotan/Amikacin/

Dr. Davaiah is a pathologist and the other authors are members of the department of surgery, of which Dr. Dragstedt is the chairman, at Veterans Administration Hospital in Des Moines.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR DECEMBER 1989

Cleocin and transported to the Veterans Administration Medical Center, Des Moines.

At Veterans Administration Medical Center the patient had increasing swelling with pain and erythema of the right leg. He was noted to have purple bullae in the involved area of the right thigh. The patient was afebrile, hypotensive (SBP<60), ABG's ph 7.31, pCO_2 23, and pO_2 99; WBC 17.0 (83 Segs/10 Bands/5 Lymphs); glucose 319; Creatine 3.4; potassium 4.8. The gram stain of skin and bullae fluid revealed Gram + cocci in chains. Penicillin was added to the antibiotic regimen. Dopamine, levophed, dobutamine, albumin and fluids were used over the next 24 hours to maintain pressure and kidney function. The patient was also in DIC. He was treated appropriately for these problems.

Surgical consultation was obtained to evaluate the right leg. The right thigh was involved from the groin to the knee. It was edematous with the appearance of a second degree burn and scattered areas of skin necrosis. There was no purulent discharge, no foul odor and no sensation over the involved area. Pain was present on the lateral thigh when flexed and the bullae had been excised for cultures and gram stain of fluids. The knee joint had been tapped with negative results. Surgery prepped and draped the right leg to explore fascial integrity. The fascia was intact to finger and blunt instrument pressure. Two small incisions (< 2 cm) were made in the fascia. There was no necrotic subcutaneous tissue present. Gram stain and cultures of the tissue below the fascia were taken. A curved Kelleys hemostat was inserted through each incision. The instrument did not pass below the fascia. The area was covered with Silvadiene creme and dressed with sterile Kerlex. A tentative diagnosis of severe cellulitis was made. The surgeons anticipated possible skin grafting. Later that evening the Gram stain revealed Gram+ cocci in chains below the fascia.

The following morning the right thigh appeared necrotic and emergency debridement of the area was done (Figure 1). During the operation, surface necrosis was observed involving most of the right thigh and extending onto the right flank. Exploration revealed massive necrosis of subcutaneous tissue. Further examination found large areas of muscle necrosis. Deep tissues were biopsied for tissue culture. A high AKA was performed with debridement of skin and subcutaneous tissue along the right flank. All cultures of skin and subcutaneous fascia were shown to be B-Strep Group A. No anaerobes were isolated. The patient is currently 6 weeks out and shows daily improvement.



Figure 1. Preoperative photograph of right thigh showing extensive skin necrosis and necrotic fascia.

Microscopic Description

The section of the skin shown demonstrates intact epidermis and dermis. There was necrosis of the superficial fascia and the muscle. In the fascia and around the necrotic muscle there were polymorphonuclear cell infiltrates. Vasculitis and thrombosis of small vessels in the fascias were seen (Figures 2-5).

Discussion

Initial injury to the skin (surgical, minor or major accidental) presents with acute pain, erythema and edema. The symptoms can mimic less serious conditions such as phlebitis or hematoma. If the process continues there is cutaneous ischemic mottling and hemorrhagic bullae within hours to days.

There is small vessel thrombosis which leads to muscle hypoxia and increasing capillary permeability.[4, 11] The resulting edema leads to lymphatic and venous outflow obstruction if located in closed fascial compartments. Compartmental pressure elevation contributes further to outflow obstruction and tissue ischemia.[3, 12] Once tissue is ischemic/necrotic, an excellent culture medium exists for further spread of the infection.

Ledingham's classification is helpful at this point. He describes necrotizing fasciitis (NF),

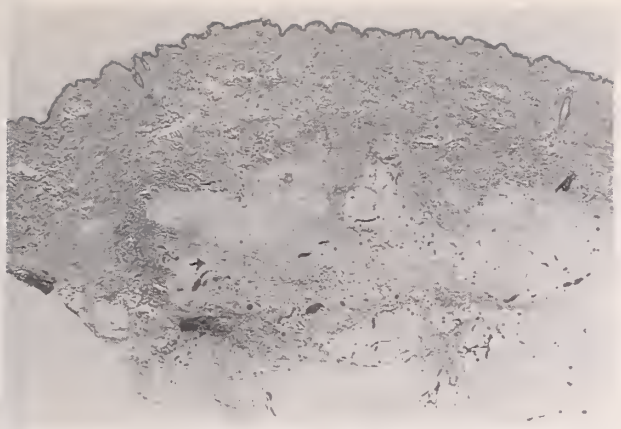


Figure 2. Skin with subcutaneous tissue showing inflammatory cells in deep dermis and subcutaneous tissue. Epidermis and dermis intact.

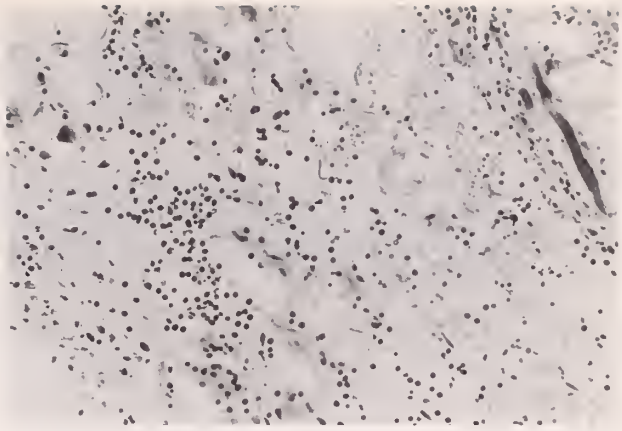


Figure 3. Inflammatory exudate in the subcutaneous tissue, with necrosis.

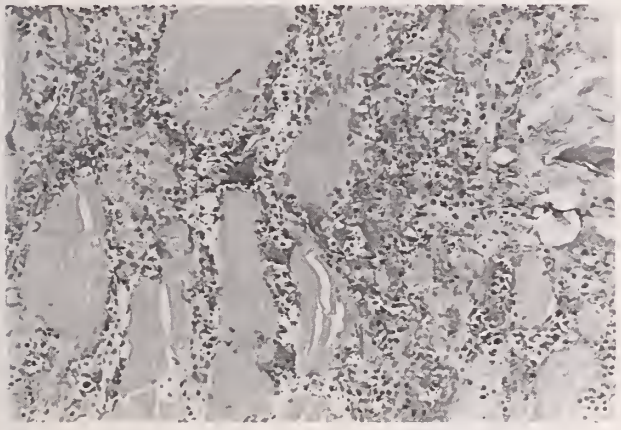


Figure 4. Myonecrosis with acute inflammatory exudate.

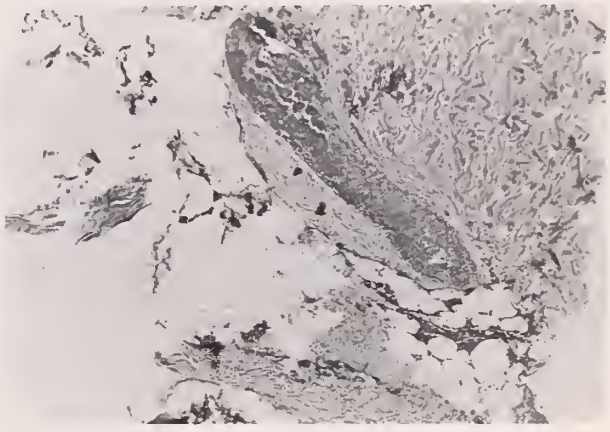


Figure 5. Thrombosis of vessels in superficial fascia.

where a major infective process in the subcutaneous tissue is followed by skin gangrene and progressive bacterial gangrene (PBG) directly related to infection of the skin. The distinction is based on the rate of onset and clinical features and not on variable bacteriological findings. NF is rapid and characterized by indistinct margins, bullous eruptions with patchy gangrene and widespread subcutaneous involvement beyond the margins of skin involvement. PBG is slower and less toxic with distinct margins, spreading areas of central gangrene, full thickness skin involved and minimal subcutaneous involvement beyond the margins of skin involvement.

Reports state the diagnosis of necrotizing fasciitis is made at surgery with demonstration of liquefactive necrosis of the superficial fascia.[8, 9] In light of the serious sequella of these infections, efforts are directed toward early diagnosis of the condition. Efforts have been made toward this goal. Stamenkovic's paper on frozen-section examination is reported to be reliable and results in earlier treatment. The mortality rate in patients in whom the diagnosis was confirmed by frozen section biopsy was 12.5%; the mortality rate was 72.7% for groups in whom the diagnosis was made later on clinical grounds or at surgery.[4] Stamenkovic's paper is useful, but most of the diagnoses were made on an average of 21 hours after the onset of symptoms (range 0-4 days) and the patients with diagnosis based on clinical grounds had surgery delayed on an average of 6 days (range 1-15 days) after the onset of symptoms. It appears the patient population in this study did not have an aggressive

(Continued next page)

form of the disease, the average onset of symptoms in the 2 groups being 21 hours and 6 days respectively.

Aitkens reported elevated muscle compartment pressure helped to confirm the diagnosis of myonecrosis in 3 of 9 patients in his study.[3] Increasing intracompartmental pressure is not a constant for patients with severe soft tissue infections.

This case points out the diagnostic dilemma facing clinicians in early recognition of this disease. The initial presentations are too variable for the various syndromes described in the literature. No one piece of clinical or laboratory data can nail down the diagnosis. The whole picture must be kept in mind. This necrotic process is dynamic. In its early stages, it appears superficial but the deeper tissue involvement may have already begun. This has been recognized by individuals who have used frozen sections or hourly manometric pressure measurements to detect rises in intrafascial pressure.[3] In this case, the deeper layer of superficial fascia was involved early. Within 6 hours of the initial surgical evaluation, the nonnecrotic viable subcutaneous tissue became necrotic. The only suggestion of deeper involvement was the gram stain.

Conclusion

Studies have observed that regardless of advances in bacterial culturing techniques, improved antibiotics and awareness of these infectious processes, these fulminating infections are frequently misdiagnosed. Traditionally, the diagnosis of necrotizing fasciitis is made at surgery with the demonstration of liquefactive necrosis of the superficial fascia.[5, 8, 9] Surgical soft tissue infectious syndromes have been confused over the years due to the varied nature of this rare and often fatal disease. The simplified classification of Ledingham is useful in the identification of the disease process but offers the diagnosis retrospectively.

Early diagnosis is the key as pointed out by all authors in the literature reviewed herein. Only 2 papers have addressed the early presentation of this disease. Stamenkovic and Aitken can offer no certain way to nail down the diagnosis.[3, 4] In this case, a subfascial gram stain showed bacteria in healthy viable intact fascia and subcutaneous tissue prior to its subsequent necrosis. This demonstrates the microscopic disease process prior to any clinical evidence of the disease. This is not offered as a means to make the diagnosis early; however, in studies where the gram stain shows bacteria in an area that is normally sterile, one must institute at least hourly observation of the infection.

References

References noted in this article are available either from the authors or the editors of *IOWA MEDICINE.*

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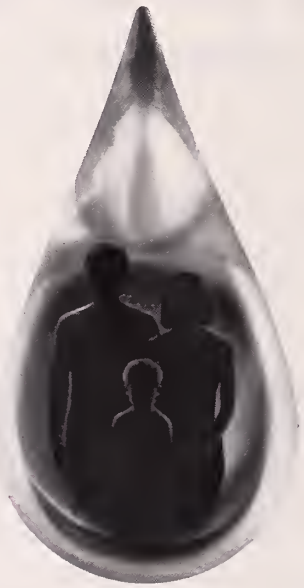
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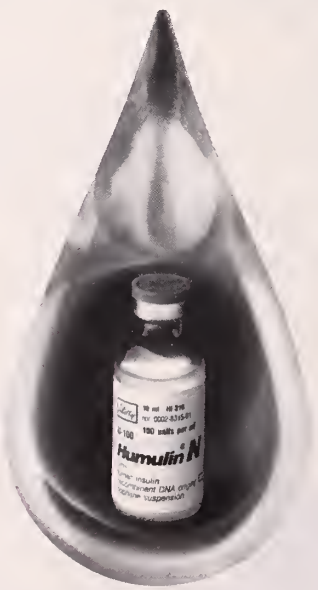
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The Editor Comments

The Physicians' Window

THE WASHINGTON NATIONAL CATHEDRAL, properly named the Cathedral Church of St. Peter and St. Paul, is due to be completed in the late 1990s. More than one hundred years of planning and construction have developed a uniqueness among cathedrals. Named after George Washington, the cathedral has a charter from the U.S. Congress and serves the entire nation as well as drawing loyalties from people from all the states and from many different church allegiances. The cathedral stands as a landmark of our native religious heritage as well as housing a vast collection of the works reflecting the talents of 20th century artists and craftsman.

In a prominent position nearest the Rose Window of the cathedral is the Physicians' Window. The cover of this issue of *IOWA MEDICINE* proudly presents a photograph of that beautiful stained glass window. The central lancet of the window depicts Christ, the Great Healer, flanked by Louis Pasteur and Sir Wilfred Grenfell of Labrador. The predellas of the 3 lancets portray Christ healing a leper (central), the medical laboratory and a country doctor driving his horse-drawn buggy, racing a stork overhead. Obviously, the artist William H. Burnham had a unique insight to the medical profession.

It is not unusual that cathedrals closely relate to the medical profession. In addition to the Physicians' Window, in the St. John Chapel the "miracle windows" portray 23 of the miracles of Jesus. There is also in the cathedral a stained glass window memorializing Florence Nightingale. That window depicts her as a Lady of the Lamp during the Crimean War and as a founder of the School of Nursing at St. Thomas Hospital in London. The significant words *Faith, Science, Charity* and *Hope* appear at the top of the 2 lancets of this window.

The physician must often equate his scientific education with his spiritual inclinations of a religious awe for the human body. We desire to know the "what" and "why" of illnesses and the resultant affect upon the body as well as the mind of the patient. The comparative history of religion and medicine reveals a tapestry woven of various civilizations intertwined with their beliefs about healing. Mystic forces made their appearance early; the primitive witch doctor previously depending upon magic rituals and demonic forces. The first mystical forces involved kneeling before various deities begging for illness to leave the patients' body. Later in history, astrology, mythology and superstition became prominent.

The advent of Christianity ushered in a power of healing as a basis of medicine. Christ performed miracles of healing and, of his apostles, St. Luke was foremost in sharing that divine gift. St. Luke, the son of a Greek slave liberated by a Roman family, practiced medicine in Antioch. His desire to help the poor was perhaps one reason St. Paul called him "the beloved physician."

We are pleased to dedicate this issue of *IOWA MEDICINE* to "healing is a sacred art requiring pure hands and pure heart." Luke preached *religio medici*, a compassion for the suffering and down trodden as well as a faith in the divine art of healing. Whatever our religious faith, we cannot practice our art of medicine alone, for hands alone cannot triumph over the ailments which might affect the body and mind. — *M.E.A.*

Richard M. Caplan, M.D.



CME Notebook

Truth, Drool and Tar Water

FROM THE MOUTHS OF BABES comes truth, or so some say. For sure, there comes drool. And from the mouths of distinguished savants comes truth, but also there may come drivel, honest errors, or even conscious lies. To assess truth is an ancient philosophical conundrum. What we now call science, or the scientific method, serves remarkably well for attaining certain kinds of truth but fails utterly for gaining or judging truth of many other kinds. As too many instances of contemporary scientific fraud reveal, science, just as other useful tools, can be distorted, misused or applied to morally suspect purposes. Too often, some scientists grow so self-secure in their relationship to truth that that they inappropriately generalize their expertness to matters about which they are not expert, as in the following example.

My dermatological interests led me to seek the history about the topical use of tar to treat various skin ailments. My search disclosed this appropriate-sounding title: *Philosophical Reflexions* (sic) *and Inquiries Concerning the Virtues of Tar Water*, published in London, 1744, by the Right Rev. Dr. George Berkeley, Lord Bishop of Cloyne. A well known major figure in the history of ideas, he reasoned that we know only sensory data, which means we cannot ever be certain of any reality beyond our own thoughts, but can only infer a universe "out there" by interpreting or extrapolating the data received from our senses — "to be is to be perceived." (He is also known for his famous comment, "Westward the course of empire wends its way," which justifies the naming of Berkeley, California.)

He meant by tar water a dilute acqueous extract derived from tar resins of pines and firs, not from the coal, fish, or petroleum tars which yield contemporary dermatologic products. More importantly, the tar water thus obtained was drunk, not applied to the skin. It served splendidly, claimed the good Bishop, in treating mild smallpox, infected cutaneous eruptions and ulcers and succeeded "beyond my hopes in a tedious and painful ulceration of the bowels, in a consumptive cough and . . . an ulcer in the lungs." He also found it very helpful in a person subject to years of erysipelatous fevers. He "never knew anything so good for the stomach as tar water; it cures indigestion and gives a good appetite. It is an excellent medicine in the asthma." And in case you're unimpressed, he found that it improves circulation, aids cachectic and hysteric states, is an excellent diuretic and "very good for the gravel."

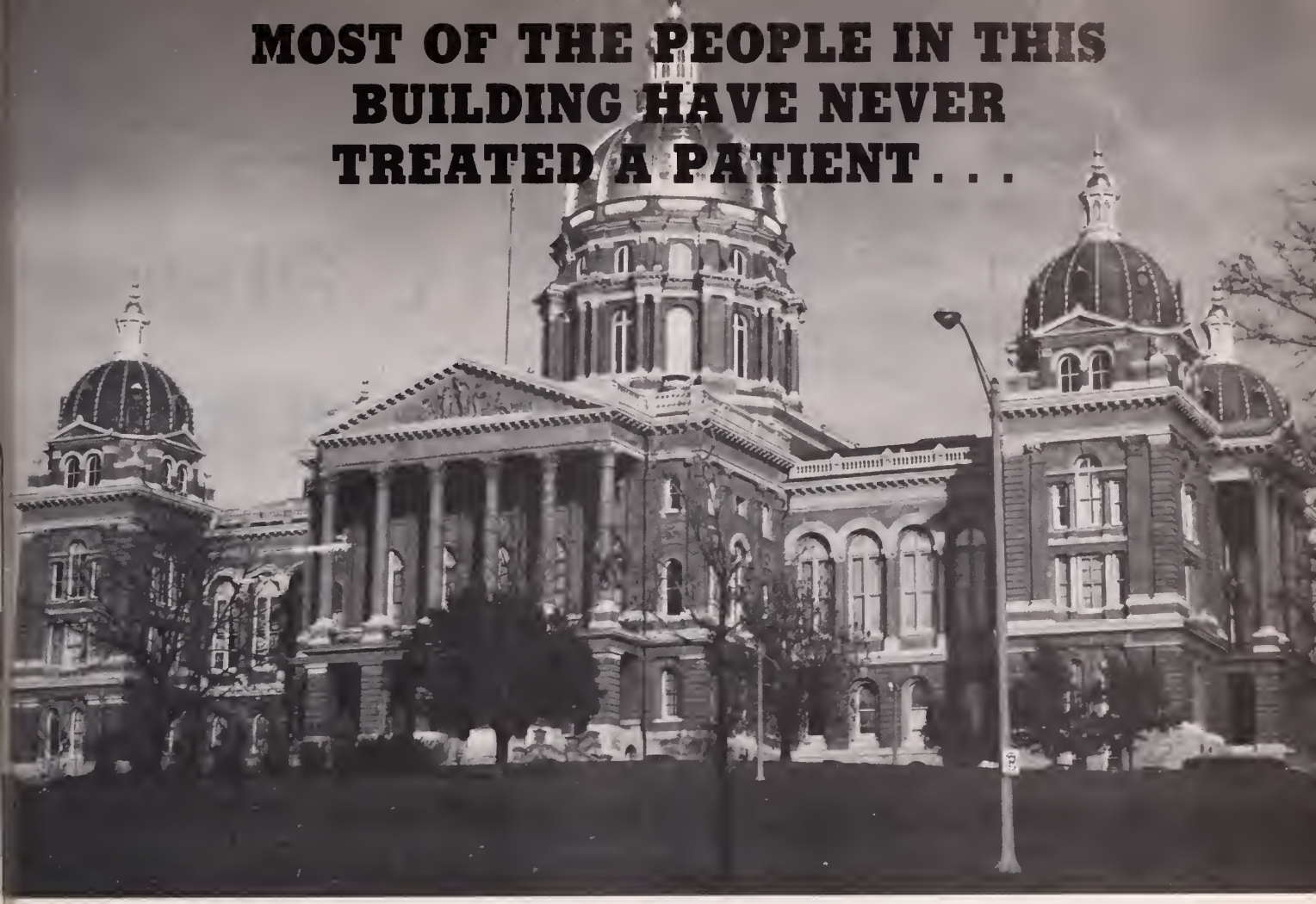
His senses clearly led him to surmise a clinical universe different from the one my senses surmise, although I shouldn't be critical, perhaps, until he's been shown wrong through careful clinical trials.

He seemed aware of the flap he would cause, to judge from this comment: "Nothing is more difficult or disagreeable than to argue men out of their prejudices; I shall not therefore enter into controversies on this subject, but if men dispute and object, shall leave the decision to time and trial."

In his defense, though, I offer this acceptable sentence: "He that would make a real progress in knowledge must dedicate his age as well as youth, the later growth as well as first fruits, at the altar of truth." In other words, hang in there, folks.

Dr. Caplan is Associate Dean for Continuing Medical Education at the University of Iowa College of Medicine.

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Tax Planning Saves Money

TRADITIONAL TAX PLANNING generally involves deferring income at year end. This year, taxpayers have an opportunity to generate ordinary income at a maximum federal tax rate of 28% (or 33% during the window period when the 15% rate and personal exemptions are phased out.)

A 28% rate is excellent and it is likely rates will increase. Taxpayers should keep their options open and monitor congressional deliberations carefully this fall. Income acceleration decisions can be made in mid-November or early December. If Congress leaves the rates unchanged, deferrals of income using typical deferral methods may be the best strategy.

If you decide to accelerate deductions in 1989, the following tax tips will help you reduce your tax bill and avoid penalties:

- Prepay your state income and local property taxes.
- Accelerate rental property deductions. In 1989, only 20% of certain rental loss will be deductible. This will be further reduced to 10% in 1990. It is also important to determine whether your losses may fall within the special exception which allows a rental loss of up to $25,000 for taxpayers with adjusted gross income of $100,000 or less. The exception is phased out for incomes from $100,000 to $150,000. If you expect your income to limit your rental loss deduction in 1990 but not in 1989, you will benefit by accelerating rental expenses into 1989.
- A 401(k) plan is an excellent way to save for retirement. In 1989 you can contribute up to $7,627 into your 401(k) plan.
- There has been a lot of discussion in the past year regarding a possible reduction in capital gains rates. It appears President Bush has enough support in Congress to get some reduction in the capital gain rate passed into law. You may want to delay selling appreciated assets until the effective date of this new legislation. Waiting until the capital gain rate is reduced from 28% under the present law to 19.6% under the proposed legislation could save you about 8% in federal income taxes.
- A contribution to your favorite charity before December 31 is another way to reduce your taxable income. You may want to donate appreciated property, deduct the full value of the asset and avoid paying tax on its appreciation. Also consider contributions of clothing, miscellaneous household items and unused tools or appliances to a charitable organization. The fair market value of these items is an allowable deduction in the year the contribution is made.
- In 1989, you can deduct only 20% of personal interest. In 1990, this deduction will drop to 10% and will be completely eliminated in 1991. To eliminate your consumer debt, consider liquidating some of your investments or use a home equity loan to pay off personal debt. You can still deduct interest on home equity loans up to $100,000. As in the past, interest on business loans is fully deductible and offset against your business income.
- TRA 86 changed rules relating to miscellaneous itemized deductions. Now only expenses exceeding 2% of your adjusted gross income are deductible as itemized deductions. To maximize this deduction for miscellaneous expenses, you may want to bunch expenses into alternate years.

Implementing some of these tax planning ideas before December 31, 1989 may save you tax money. A professional tax advisor may have additional ideas.

This article was written by Scott Porter of McGladrey & Pullen, Des Moines.

Responding to Adolescent Health Needs

RESPONDING TO NEEDS OF IOWA youths, the Iowa Department of Public Health (IDPH) supports several adolescent health projects. These projects include adolescent health care services, TEEN Line and the Iowa Adolescent Health Journalism Contest.

Adolescent health care services are provided through community-based maternal and child health agencies that contract with IDPH. Youths who otherwise would not have access to adequate health care receive free or low-cost, confidential and multi-disciplinary care. Services, which conform to state and federal guidelines, include either direct care or referral to other health care providers.

Youths generally initiate contact with a child health clinic because of an immediate health concern. The goal of adolescent health services, however, is to provide preventive health care. The mission is to inform youths about health needs and encourage them to participate in an ongoing preventive health program.

Pilot Projects

An assessment process helps identify health behaviors, attitudes and risks to develop an individualized health plan. Case management activities facilitate referrals and monitor intervention outcomes through tracking.

All maternal and child health agencies that contract with IDPH may serve Iowa adolescents. In addition, 3 child health agencies have developed adolescent pilot projects. These special projects are located in Manning, Marshalltown and Waterloo.

The Manning project, which collaborates with the Manning Community School District, provides student wellness and health assessment. The Marshalltown and Waterloo child health agencies sponsor freestanding adolescent, or teen, clinics. These teen clinics offer health screening, assessment, health education and intervention services.

To plan adolescent health services, a study is now in progress to determine perceptions of teenage health problems in Iowa such as substance abuse, academic pressures, peer or family problems and depression. Youths, their families and their communities will provide input from rural and urban areas on needed health care services in Iowa. Participating communities are Davenport, Manning, Marshalltown, Red Oak and Waterloo.

The Iowa Adolescent Health Care Needs Assessment is sponsored by the IDPH and the University of Iowa School of Social Work. Directing the study are Edward Saunders, Ph.D. and Theora Evans-Dodd, MPH, assistant professors from the University of Iowa.

The study involves interviews with community leaders and surveys in community organizations. Focus groups for students and their parents also are being conducted. Results are expected to be available in early 1990. IDPH will use the results in conjunction with other studies concerning adolescent behavior and attitudes. One such study, "1987-1988 Iowa Study of Alcohol and Drug Attitudes and Behaviors Among Youth," was conducted by Dr. David Wright, consultant, substance abuse prevention education, Iowa Department of Education.

This information on public health matters is furnished and sponsored by the Iowa Department of Public Health.

IDPH will coordinate adolescent health care resources with other state agencies that serve Iowa's youths to develop statewide health programs. These programs will expand existing child health center programs for 10 to 21-year-olds.

The Department also assists in supporting 2 other adolescent health projects — TEEN Line and the Iowa Adolescent Health Journalism Contest. These projects are the direct result of concerns regarding teen communication voiced by the Department's Adolescent Health Advisory Committee.

TEEN line is a toll-free, state-wide health information and referral program. Calls reflect teen's concerns on health matters. Though TEEN Line is not a crisis or hot line, it receives up to 14 suicide calls per month.

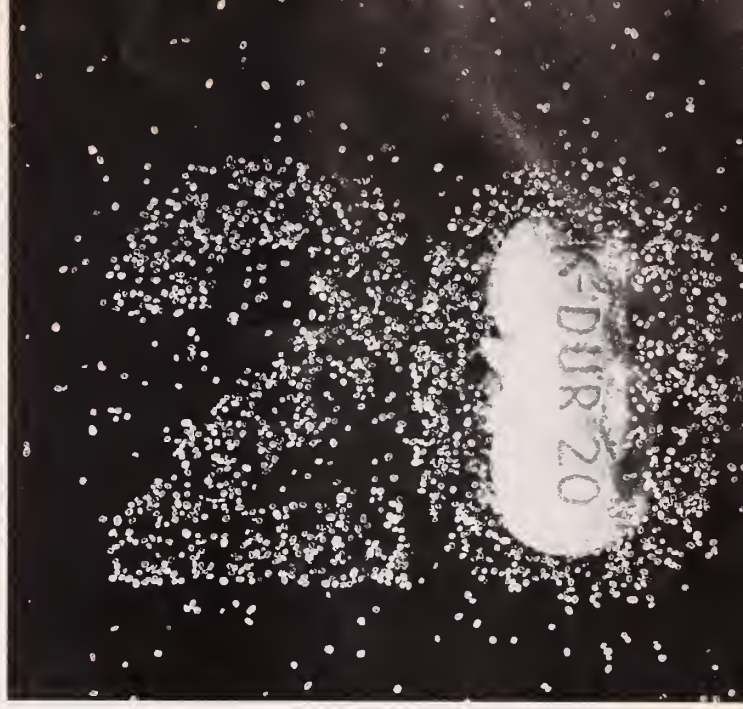
Essays received through the Adolescent Health Journalism Contest indicate Iowa's adolescents are able to deal with vital health issues in a straightforward manner. A sampling of their opinions reveal the following teens' thoughts.

- Parents should take a more active role in sexuality issues. They need to get past their embarrassment and stop assuming kids already know everything about sex.
- Sex education classes help teens make responsible decisions. Classes increase teens' awareness of sexually transmitted diseases. (A 1986 poll by *Pyschology Today* found that among 15 and 16-year-olds, 17% who took sex education were sexually active, while 26% who did not take the class were sexually active.)
- Adolescents who have school, home or personal problems are susceptible to depression.

For more information, contact the Iowa Department of Public Health, Bureau of Maternal and Child Health.

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2. For the prevention of potassium depletion when the dietary intake is inadequate in the following conditions: Patients receiving digitalis and diuretics for congestive heart failure, hepatic cirrhosis with ascites, states of aldosterone excess with normal renal function, potassium-losing nephropathy, and with certain diarrheal states.

3 The use of potassium salts in patients receiving diuretics for uncomplicated essential hypertension is often unnecessary when such patients have a normal dietary pattern. Serum potassium should be checked periodically, however, and if hypokalemia occurs, dietary supplementation with potassium-containing foods may be adequate to control milder cases. In more severe cases supplementation with potassium salts may be indicated.

CONTRAINDICATIONS: Potassium supplements are contraindicated in patients with hyperkalemia since a further increase in serum potassium concentration in such patients can produce cardiac arrest. Hyperkalemia may complicate any of the following conditions: Chronic renal failure, systemic acidosis such as diabetic acidosis, acute dehydration, extensive tissue breakdown as in severe burns, adrenal insufficiency, or the administration of a potassium-sparing diuretic (e.g., spironolactone, triamterene).

Wax-matrix potassium chloride preparations have produced esophageal ulceration in certain cardiac patients with esophageal compression due to enlarged left atrium.

All solid dosage forms of potassium chloride supplements are contraindicated in any patient in whom there is cause for arrest or delay in tablet passage through the gastrointestinal tract. In these instances, potassium supplementation should be with a liquid preparation.

WARNINGS: Hyperkalemia—In patients with impaired mechanisms for excreting potassium, the administration of potassium salts can produce hyperkalemia and cardiac arrest. This occurs most commonly in patients given potassium by the intravenous route but may also occur in patients given potassium orally. Potentially fatal hyperkalemia can develop rapidly and be asymptomatic. The use of potassium salts in patients with chronic renal disease, or any other condition which impairs potassium excretion, requires particularly careful monitoring of the serum potassium concentration and appropriate dosage adjustment.

Interaction with Potassium Sparing Diuretics—Hypokalemia should not be treated by the concomitant administration of potassium salts and a potassium-sparing diuretic (e.g., spironolactone or triamterene) since the simultaneous administration of these agents can produce severe hyperkalemia

Gastrointestinal Lesions—Potassium chloride tablets have produced stenotic and/or ulcerative lesions of the small bowel and deaths. These lesions are caused by a high localized concentration of potassium ion in the region of a rapidly dissolving tablet, which injures the bowel wall and thereby produces obstruction, hemorrhage or perforation.

K-DUR tablets contain micro-crystalloids which disperse upon disintegration of the tablet. These micro-crystalloids are formulated to provide a controlled release of potassium chloride. The dispersibility of the micro-crystalloids and the controlled release of ions from them are intended to minimize the possibility of a high local concentration near the gastrointestinal mucosa and the ability of the KCl to cause stenosis or ulceration. Other means of accomplishing this (e.g., incorporation of potassium chloride into a wax matrix) have reduced the frequency of such lesions to less than one per 100,000 patient years (compared to 40–50 per 100,000 patient years with enteric-coated potassium chloride) but have not eliminated them. The frequency of GI lesions with K-DUR tablets is, at present, unknown. K-DUR tablets should be discontinued immediately and the possibility of bowel obstruction or perforation considered if severe vomiting, abdominal pain, distention, or gastrointestinal bleeding occurs.

Metabolic Acidosis—Hypokalemia in patients with metabolic acidosis should be treated with an alkalinizing potassium salt such as potassium bicarbonate, potassium citrate, potassium acetate, or potassium gluconate.

PRECAUTIONS: The diagnosis of potassium depletion is ordinarily made by demonstrating hypokalemia in a patient with a clinical history suggesting some cause for potassium depletion. In interpreting the serum potassium level, the physician should bear in mind that acute alkalosis per se can produce hypokalemia in the absence of a deficit in total body potassium while acute acidosis per se can increase the serum potassium concentration into the normal range even in the presence of a reduced total body potassium. The treatment of potassium depletion, particularly in the presence of cardiac disease, renal disease, or acidosis requires careful attention to acid-base balance and appropriate monitoring of serum electrolytes, the electrocardiogram, and the clinical status of the patient.

Laboratory Tests: Regular serum potassium determinations are recommended. In addition, during the treatment of potassium depletion, careful attention should be paid to acid-base balance, other serum electrolyte levels, the electrocardiogram, and the clinical status of the patient, particularly in the presence of cardiac disease, renal disease, or acidosis.

Drug Interactions: Potassium-sparing diuretics; see **WARNINGS**.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term carcinogenicity studies in animals have not been performed.

Pregnancy Category C: Animal reproduction studies have not been conducted with K-DUR. It is also not known whether K-DUR can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. K-DUR should be given to a pregnant woman only if clearly needed.

Nursing Mothers: The normal potassium ion content of human milk is about 13 mEq per liter. Since oral potassium becomes part of the body potassium pool, so long as body potassium is not excessive, the contribution of potassium chloride supplementation should have little or no effect on the level in human milk.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS: One of the most severe adverse effects is hyperkalemia (see **CONTRAINDICATIONS, WARNINGS,** and **OVERDOSAGE**). There have also been reports of upper and lower gastrointestinal conditions including obstruction, bleeding, ulceration, and perforation (see **CONTRAINDICATIONS** and **WARNINGS**); other factors known to be associated with such conditions were present in many of these patients.

The most common adverse reactions to oral potassium salts are nausea, vomiting, abdominal discomfort, and diarrhea. These symptoms are due to irritation of the gastrointestinal tract and are best managed by taking the dose with meals or reducing the dose.

Skin rash has been reported rarely.

OVERDOSAGE: The administration of oral potassium salts to persons with normal excretory mechanisms for potassium rarely causes serious hyperkalemia. However, if excretory mechanisms are impaired or if potassium is administered too rapidly intravenously, potentially fatal hyperkalemia can result (see **CONTRAINDICATIONS** and **WARNINGS**). It is important to recognize that hyperkalemia is usually asymptomatic and may be manifested only by an increased serum potassium concentration and characteristic electrocardiographic changes (peaking of T-waves, loss of P-waves, depression of S-T segment, and prolongation of the QT-interval). Late manifestations include muscle-paralysis and cardiovascular collapse from cardiac arrest.

Treatment measures for hyperkalemia include the following:

1. Elimination of foods and medications containing potassium and of potassium-sparing diuretics.

2 Intravenous administration of 300 to 500 ml/hr of 10% dextrose solution containing 10–20 units of insulin per 1,000 ml.

3 Correction of acidosis, if present, with intravenous sodium bicarbonate.

4 Use of exchange resins, hemodialysis, or peritoneal dialysis.

In treating hyperkalemia, it should be recalled that in patients who have been stabilized on digitalis, too rapid a lowering of the serum potassium concentration can produce digitalis toxicity

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All persons designated as authors of a particular article should have participated sufficiently in the work to take public responsibility for the concept.

The paper will be reviewed by the publications committee and a follow-up letter will be sent to the author, either accepting or rejecting the article.

All material is subject to editing by the staff copy editor to assure clarity and good grammar and to conform to *IOWA MEDICINE* style and format. The author will receive galley proof of the paper prior to publication to check for inaccuracies, but no rewriting may be done after the manuscript is set in galleys.

Please follow the reference list style as published in current issues of *IOWA MEDICINE*. If the reference list contains more than 10 references, it will not be published with the paper but retained at *IOWA MEDICINE* and copied upon request.

Tables should be numbered and typed on a separate sheet. They should supplement, not duplicate, the text. Considering the production cost of tables and photos, only a limited number can be accepted with each article.

Photos should be black and white glossy prints. Some color photos are acceptable if the contrast is good.

Line drawings are acceptable if they are dark and can be reduced to fit in one column.

IOWA MEDICINE accepts only material which has not been submitted or published elsewhere. When a paper is accepted for publication, the editors reserve the right to publish it when appropriate or when space is available. Papers submitted by IMS physician members are given first priority.

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Medical News/Products and Programs

MAMMOMAT C BREAST IMAGING SYSTEM NOW ON THE MARKET — *Siemens Medical Systems, Inc. has been granted permission by the FDA to market their newest mammography system in the U.S. A free-standing, self-contained imaging system, the MAMMOMAT C is designed to perform mammography screening and complete radiological diagnosis of the breast. The MAMMOMAT C has motorized the manual breast compression with maximum pressure levels of 150 N and 200 N respectively. Motorized compression has manual override. When the exposure is completed, pressure can be removed immediately with the system's instant release foot pedal located in the control side of the protective shield. MAMMOMAT C pairs a proven microprocessor-controlled high frequency generator with Siemens IONTOMAT P, automatic exposure control. The MAMMOMAT C diagnostic configuration provides magnification and biopsy localization capability.*

For additional information contact Siemens Medical Systems, Inc., Roentgen Systems Division, 186 Wood Avenue South, Iselin, New Jersey 08830.

MANUAL TO OUTLINE NEW FEDERAL REGULATIONS — The Nebraska Academy of Family Physicians has published *An Organizational Manual for the Physicians' Office Laboratory*. The manual has been endorsed by the American Academy of Family Physicians Commission on Health Care Services as invaluable in bringing physicians' office labs into line with new federal regulations. The manual includes an up-to-date discussion of the Clinical Laboratory Improvement Amendment of 1988 (CLIA-88) as well as a detailed outline for setting up an office lab which will meet federal regulations. CLIA-88 will bring physicians' of-

(Continued next page)

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fice laboratories under the regulatory control of the Health Care Financing Administration (HCFA) beginning January, 1990.

The manual may be purchased from Nebraska Academy of Family Physicians, 401 N. 117th Street, Suite 202, Omaha, Nebraska 68154. The price is $29.95 ($19.95 unbound).

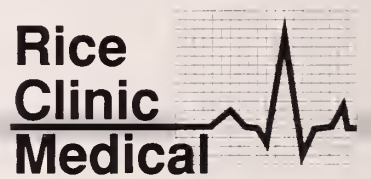
Recent Books

Upchurch, D. Thomas, M.D., editor, 1989, *Otolaryngology: Problems in Primary Care*, Medical Economics Books, Oradell, New Jersey, $42.95. This is a compact, well-organized reference book for the primary physician. There are 4 sections: 1) assessment: considerations of anatomy, physiology and examination; 2) problems: a number of major problem areas which may present in the daily practice of the primary physician; 3) review of specific diseases; and 4) discussion of emergency situations involving head and neck structures. Concise and appropriate for the primary physician, this book is an easy source of reference.

Buchanan, James H., 1989, *Patient Encounters: The Experience of Disease*, The University of Virginia Press, Charlottesville, Virginia 22903, $24.95. The author, in a delightful way, tells the story of a number of devastating diseases, e.g., Alzheimer's, acromegaly, AIDS, amyotrophic lateral sclerosis. He combines the scientific with the subjective to provide a vivid insight to the mechanisms and the progression of various diseases. He draws upon valid references for scientific descriptions of the day to day experiences of the victim. The personal experiences of the patients present an aspect of disease processes in a manner no medical textbook can relate.

Heiby, Walter A., 1988, *The Reverse Effect*, MediScience Publishers, Deerfield, Illinois 60015, $59.50. The subtitle of this 1,198 page work provides some insight to the content — "How vitamins and minerals promote health and cause disease." The title page carries this admonition: "Laymen should not, however, construe the ideas in this book to be medical advice. Consult your physicians regarding specific health problems." The author has collected 4,821 references to present his controversial thesis and states in his preface thousands more were studied but not cited. Many physicians will take offense to his pronouncements. It is a value to know his thoughts, however, because many lay persons will have read this book. He is definitely in the camp of the holistically-oriented doctors and declares rightly so, that doctors are often relatively untrained in nutrition and other alternative health modalities. He indicates doctors are more disease oriented than health oriented.

Moore, Mike, editor, 1989, *Health Risks and the Press*, The Media Institute, 3017 M Street, N.W., Washington, D.C. 20007, $12.95 plus $1.00 shipping cost. This book offers the perspective of 6 noted scientists, academicians and journalists on media coverage of environmental health risks. Though of special interest to health and science writers, editors and producers, executives of companies involved in risk assessment and management will find the essays interesting. The final words of the last essay place the discussion in a proper perspective — that health-risk information must be "reasonable, thorough, balanced and updated as facts change."



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U. of I. College of Medicine

A NEW RESEARCH FACILITY IN THE COLLEGE HAS BEEN NAMED TO HONOR DEAN JOHN W. ECKSTEIN, a 1950 graduate of the UI medical school. Eckstein, a native of Central City, was named dean in 1970. He earned international distinction and a number of grants and other awards for his cardiology research while a member of the internal medicine faculty from 1954-70 and in 1979 was president of the American Heart Association. The new building has 5 floors of laboratory space for up to 200 staff members. Six "cores" of specialized equipment to permit research at the cellular and molecular levels are included. This equipment also facilitates the increasingly interdisciplinary nature of biomedical research. (The building, completed in 1988, had been called the Human Biology Research Facility.)

WITH AN INNOVATIVE CLINICAL TECHNIQUE, Dr. Michael Trigg, Pediatrics, has achieved a survival rate of approximately 40% in children with acute lymphoblastic leukemia who have failed conventional chemotherapy. This service in the University Hospitals and Clinics is innovative in that it can use donors who are not good matches for recipients.

A THIRD FACULTY MEMBER HAS BEEN NAMED TO BE A HOWARD HUGHES MEDICAL INSTITUTE INVESTIGATOR. He is **Dr. Kevin P. Campbell, Physiology and Biophysics,** who will be fully supported by the Hughes organization for at least 7 years in research of his choice. Campbell studies the function of proteins in regulating movement of calcium in muscle cells. Earlier this year his team isolated the protein dystrophin, lack of which causes Duchenne muscular dystrophy. Isolation of the protein allows examination of structure and function that could lead to a treatment or therapy. Iowa is the only Big Ten university with Hughes Investigators outside a Hughes branch institute like the one at the University of Michigan. All 3 at Iowa have been named since May.

THE FIRST TELEVISED GRAND ROUNDS OF THE DEPARTMENT OF PEDIATRICS were presented to pediatricians and family physicians in several Iowa locations in September, 1989. Participants interacted via live TV and telephone. The topic was the recent announcement in Science *magazine (September 9) of isolation of the gene linked to the cause of cystic fibrosis. UI presenters were* ***Miles Weinberger, Jeffrey Murray,*** *and* ***Jeffrey Smith.***

AS IT HAS EACH YEAR FOR THE PAST SEVERAL YEARS, THE PERCENTAGE OF WOMEN STUDENTS in UI medical classes went up this fall, to 35.5% among freshmen and 34% overall. It is the highest proportion in freshmen since 41.7% 9 years ago. The freshman class numbers 172, and its overall entering grade point average of 3.5 is above the national average. Eighty-seven percent are from Iowa. There are 19 students in the Educational Opportunities Program for academically qualified members of 4 ethnic minorities underrepresented in medicine.

ONCE AGAIN, UI RESEARCHERS ARE 'DOWN ON THE FARM' IN THE CAUSE OF ACCIDENT PREVENTION. In October some 100 Cerro Gordo County farm families were asked about home treatment of farm injuries in a survey by the Department of Agricultural Medicine and Occupational Health and the Iowa state health department as part of an evaluation of the effectiveness of programs to prevent injuries among rural youth.

TWO MEDICAL STUDENTS HAVE WON COVETED PRIZES. Martha Simmons, a junior, received a $16,000 scholarship from the Life and Health Insurance Research Fund, one of 6 awarded nationally. Senior Francisco

(Continued next page)

This material is furnished by The University of Iowa Health News Service.

Gomez is one of 20 medical students to win a 1989 Commonwealth Fund Medical Fellowship with a $5,000 stipend. Both are conducting research projects in addition to their medical studies.

THE UI ALUMNI ASSOCIATION AND THE COLLEGE OF MEDICINE COLLABORATED in an "Ethics in Health and Medicine" workshop in November that brought private practitioners, faculty, ethicists and fiscal planners to talk with lay citizens about ethical conduct in research, biomedical ethics, advanced aging and death, cost containment, critical illness and care rationing.

FACULTY HONORS, AWARDS AND OFFICES: Mark Albanese, Research in Medical Education, to the executive committee of the Society of Directors of Research in Medical Education; **Lee Alward, Ophthalmology,** first recipient of a research award from the department's Charles D. Phelps memorial fund, established for a former department head; **Elizabeth Burns, Family Practice,** named to the Iowa health department's committee on health professional shortage; **Robert Corry, Surgery,** named president of the board of directors of the United Network for Organ Sharing; **Paul Heidger, Anatomy** and **David P. Wacker, Pediatrics,** named to the Centennial Alumni Hall of Fame at the University of Northern Colorado.

THE DEPARTMENT OF OPHTHALMOLOGY HAS RECEIVED A DISTINGUISHED SERVICE AWARD from the American Academy of Ophthalmology in recognition of 65 years of training residents and fellows in ophthalmology. The award was received by Dr. ***Thomas A. Weingeist,*** *department head, in connection with the annual meeting of the Academy in October.*

DRS. IRVING P. CRAWFORD, 58, AND MELVIN L. MARCUS, 49, DIED IN OCTOBER, both of cancer. Dr. Crawford was professor and head of the Department of Microbiology and had been a faculty member since 1977. Dr. Marcus, a cardiologist, was in the Department of Internal Medicine, to which he was appointed in 1973.

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About Iowa Physicians

Two Des Moines pediatric offices were featured in the Fall issue of *Iowa Architect* magazine. The offices of **Dr. Frederick Aldrich** of 2940 Ingersoll and **Drs. John Gay** and **B. Chandramouli** of Pediatric Cardiology, P.C., 939 19th Street, underwent design changes to make the environment more colorful and comfortable for their young patients. **Dr. John Robb,** a Cedar Rapids orthopedist, has earned the Founder's Award presented by St. Luke's Health Care Foundation for his exemplary contributions to the community. **Dr. Charles Breeling,** Paullina, has been named Physician of the Year by the Iowa Health Care Association at the Association's annual convention and awards banquet in Des Moines. Dr. Breeling was given the award for his service to the Wide View Rest Home, Paullina and Millie's Rest Home, Sutherland. **Dr. George Drake** has opened a private family practice in Pleasantville. Dr. Drake practiced in Carlisle for 3 years. **Dr. William Spencer,** Osage, recently received the American Cancer Society, Iowa Division, Inc.'s distinguished Quality of Life Service Award during the organization's annual meeting in Des Moines. Dr. Spencer was recognized for his contribution to patient service and rehabilitation programs. **Dr. John Sheirholz,** was recently chosen as president-elect by the Iowa Radiological Society. **Dr. Stephen Van Houten** was selected as an alternate Councilor. Both physicians are from the radiology department at McFarland Clinic in Ames. **Dr. Michael Pogel** has joined **Drs. Marc Hines** and **Roland Langley** at Regional Specialty Clinics, Ottuma. Dr. Pogel received the M.D. degree at the University of Miami School of Medicine, Miami, Florida and served his neurology residency at Baylor College of Medicine, Houston, Texas. Prior to joining the Ottumwa clinic, Dr. Pogel was chief of the neurology-neurosurgery section at Presbyterian Hospital and St. Joseph Hospital in Albuquerque, New Mexico. **Dr. Philip A. Bear,** Des Moines, has joined **Drs. Mark McGaughey** and **Mark Tannenbaum** at the Iowa Heart Center.

Four physicians at U. of I. Hospitals and Clinics have been named outstanding medical specialists in the U.S. in the October issue of *Town & Country* magazine. **Drs. Barrie Anderson,** obstetrics and gynecology; **Antonio Damasio,** neurology; **John Strauss,** dermatology; and **John Van Gilder,** neurosurgery, were selected by doctors nationwide as "noteworthy colleagues in their field of specialty." **Dr. Dale Christensen,** Lake City, has been named the 1989 Family Doctor of the Year by the Iowa Academy of Family Physicians. Dr. Christensen has practiced in Lake City for 31 years. **Dr. Donald Hannon** has begun practice in Britt. Dr. Hannon received the M.D. degree from the University of Minnesota Medical School, Minneapolis, Minnesota and practiced in St. Paul, Minnesota for many years. **Dr. Cindy Pals** has joined the Orange City Medical Clinic. Dr. Pals received the M.D. degree from the U. of I. College of Medicine and completed a family practice residency in Sioux City.

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Good Laws Require Physician Involvement

Good laws lead to the making of better ones; bad ones bring about worse. As soon as any man says of the affairs of the State: 'What does it matter to me?' the State may be given up for lost.

— Jean-Jacques Rousseau

WHENEVER NEW HEALTH CARE LEGISLATION is under consideration in Iowa, it's a sure bet Iowa physicians are making an effort to ensure the legislation is in the best interests of their patients.

The yearly session of the Iowa General Assembly lasts only a few months, but politics and the legislative process never take a holiday. Physicians and their families are very much aware that their active involvement is vital if we are to have good health care legislation in Iowa.

Every year, the sheer volume of proposed legislation is staggering. Literally hundreds of bills are introduced in the Iowa General Assembly and many other proposals are studied and discussed throughout the year. Though legislators make the final decisions about our health care delivery system, they rely on expert information when considering health care issues. They depend on Iowa physicians for expertise on medical issues.

The IMS believes this process is vital if the delivery of medical care is to be in the best interest of patients and physicians. Thus, the Society has initiated several programs to ensure lawmakers have the benefit of medicine's perspective when making decisions.

Currently, the IMS is conducting an organized effort to identify physicians who will serve as expert resources on key health related issues. These physicians, chosen because they each have a certain field of expertise, will be ready to consult with key legislators regarding a wide range of proposed legislation.

In a variation of the foreign exchange student program, Iowa physicians will also be visiting the Statehouse during the 1990 legislative session to observe the process and attend key health care committee meetings. On the flip side, this fall the IMS has been sponsoring very successful "mini-internships" which involve legislators spending a day as physician "interns." The program's goal is to give legislators insight into the practice of medicine in Iowa and the day-to-day concerns of physicians and their patients.

Throughout the year, Iowa physicians are also involved in giving testimony to legislative committees, speaking to legislators in their home districts and serving on study committees created by the Iowa Legislature. These interim committees meet prior to the annual legislative session to study key health care issues and provide viable recommendations on solving health care delivery problems.

Currently, physician members of the Iowa Medical Society are serving on legislative task forces studying the following health care issues: medical care for the uninsured, treatment of the mentally ill, Iowa's involuntary commitment laws and related issues, the supply of health care personnel and delivery of health care in rural Iowa.

For Iowa physicians, making good health care laws is a year-round priority.

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Warnings: *Angioedema:* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident.

If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function:* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension: Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION: The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest, pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Vasculitis, muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g % and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance >30 mL/min (serum creatinine up to approximately 3 mg/dL). For patients with creatinine clearance ≤30 mL/min (serum creatinine ≥3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium <130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD Representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486.

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